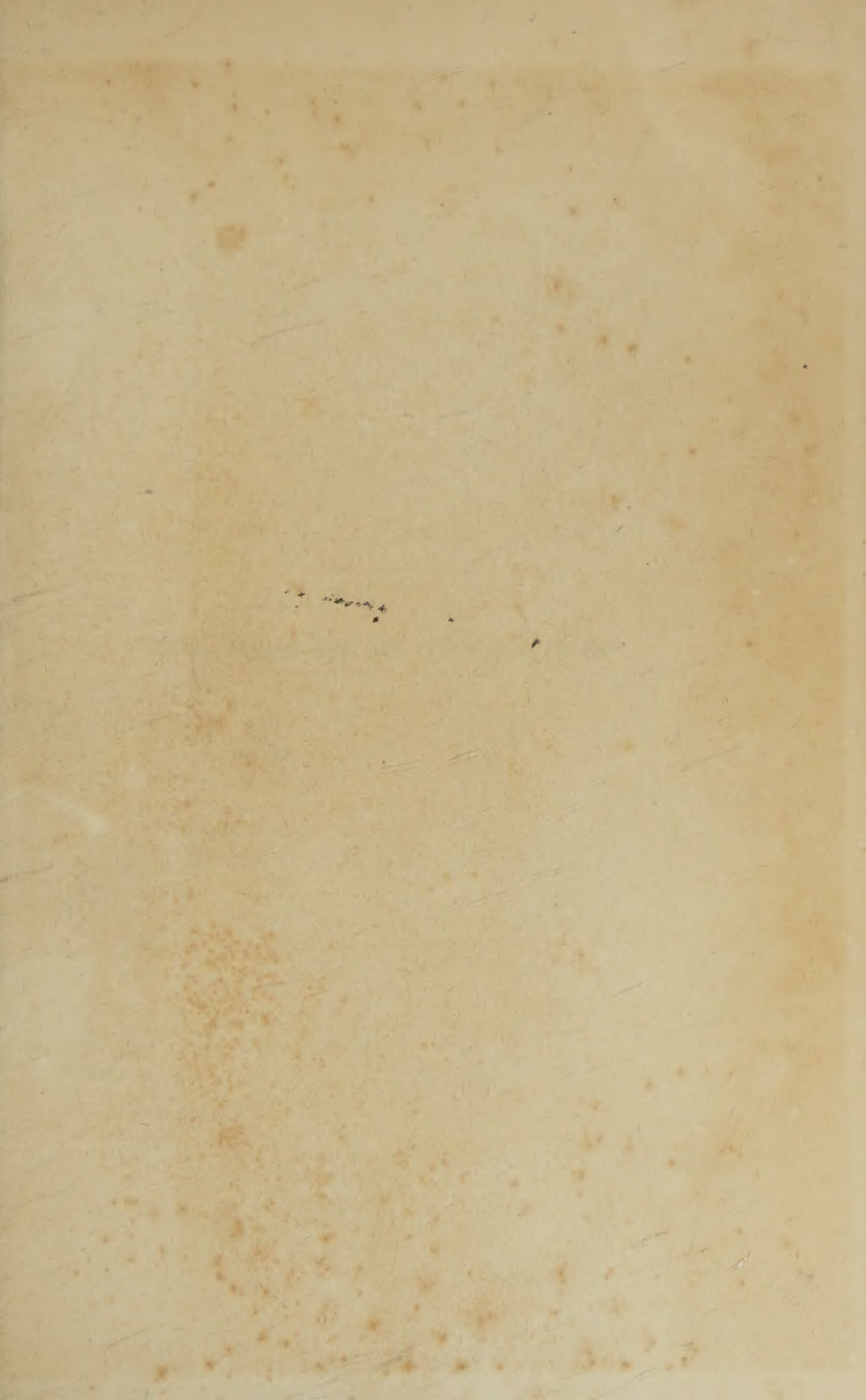


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THE HEALTH OF THE NATION

THE HEALTH OF THE NATION

BY

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With a Foreword by
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Minister of Health

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TO THE RIGHT HONOURABLE
STANLEY BALDWIN

A VERY GREAT ENGLISHMAN

THIS BOOK IS DEDICATED

FOR THE STRENGTHENING AND ENRICHMENT OF LIFE
OF THE PEOPLE HE LOVES AND LEADS

Whether a nation be great or little depends entirely on what sort of men and women it is producing. A sound nation is a nation that is made up of sound human beings, healthy in body, strong of limb, true in word and deed, brave, sober, temperate and chaste.

J. FROUDE.

Our bodies are our gardens, of which our wills are gardeners.

WILLIAM SHAKESPEARE.

AUTHOR'S INTRODUCTORY NOTE

IN the all-pervading problems of public health, in which the national and local electorate is keenly interested and personally concerned, it is difficult to realise either the relative value of facts or the statutory provisions, regulations, orders, and by-laws concerned with them. Legal language is difficult to follow ; effective powers in any particular case are difficult to ascertain ; generalisations are as misleading as single instances. The perplexities of the politician, the ratepayer and the social reformer are shared to no small extent by medical officers and local authorities.

It is hoped that this book may be useful to all concerned in bringing together in right proportion the main facts and factors in the health of the people, and the general system of law, authority and administration affecting each issue. In contrast with medical and legal text-books, written for professional use, on the one side, and with popular handbooks, written to arouse and satisfy well-meant curiosity, on the other, stress is here laid on the Parliamentary aspect of the problems, and on their political history and economic bearing. I hope it may be as useful to my colleagues in both Houses of Parliament, and to all to whom may fall the opportunity to instruct and encourage public opinion in such matters, as the writing of it has been to myself. The record of achievement on

which it is based is one that can hardly be matched in any other country or time. It is on public opinion and personal determination that further progress will depend ; and thereout the nation may expect the richest reward.

I gratefully acknowledge help from many friends and colleagues, and not least from some who prefer to remain unknown. My thanks are especially due to Dr. W. W. Jameson, Medical Officer of Health, Hornsey ; to Miss A. L. Lawrence, of the staff of the British Medical Association ; Miss Hester Viney, of the College of Nursing ; Mr. H. N. Linstead, Secretary of the Pharmaceutical Society ; Mr. R. Lindsay, of the British Dental Association ; Miss Evelyn Fox, of the Central Association for Mental Welfare ; and to the officers of many other health organisations ; to Professor F. Hobday, F.R.C.V.S., Professor E. L. Collis, Sir John Robertson, Dr. A. K. Chalmers, Sir J. K. Fowler, Sir Leonard Rogers ; and, not least, to the numerous officers of official organisations and Government Departments whose tedious duty it is to furnish the replies to Members' questions in the House of Commons.

To Mr. Neville Chamberlain my thanks are especially due for having, as for *The Housing of the Nation*, contributed the Foreword, thus giving to *The Health of the Nation* the *cachet* of the Minister who, with exceptional gifts of level-headed insight and clear and forceful exposition, has done more than any other statesman to promote a policy of continual progress for the advancement of the National Health.

FOREWORD

BY

THE RT. HON. NEVILLE CHAMBERLAIN, M.P.,
MINISTER OF HEALTH

IN acceding to Colonel Fremantle's request that I should contribute a brief Foreword to his handbook on *The Health of the Nation* I must premise that the views and opinions expressed therein are his own, and that I must not be held necessarily to assent to them. But I welcome his book as a useful and comprehensive review of the organisation and purpose of our public health service. A perusal of its pages serves to bring out the extent and variety of the measures taken to safeguard the health of the nation, while statistics of death-rates and of the incidence of some of the diseases formerly dreaded as among our most deadly foes fortify us in the belief that our efforts have been crowned with a substantial measure of success.

Colonel Fremantle has attempted in one of his chapters to estimate in monetary terms the profits and losses of national health ; I may be permitted to doubt if such estimates provide a true value for things which themselves are incapable of measurement. But human happiness and human capacity for useful work, whether of hand or brain, are indubitably bound up with physical health and fitness, and there will be no disagreement with the view that the health of its members must always be one of the first cares and duties of any progressive community.

The history of the growth of public health organisation in this country reveals, not only its strange and varied origins, but its steady incorporation

of many aspects of human life formerly considered to lie outside its scope. For, though it began with the relief of the poor and the registration of births and deaths, it now comprises industrial welfare, the control of the food-supply, the provision of housing accommodation, the care of the infectious person, and the supervision of the mentally defective. The utilitarian and the individualist of a century ago would be even more surprised to discover that our modern understanding of public health organisation contains provisions for dealing with maternity and infant welfare, with the child before and during its school life, with the health insurance of the great majority of the wage-earners of the country, and with the education in hygiene of the people as a whole. Thus the scope of the subject has been enlarged until it includes almost everything which concerns the life of man, from the cradle to the grave. I am satisfied that this enlargement, this wider understanding of the problem to be solved, is in itself responsible for much of the success which has been attained. The idea of our forefathers that the sanitation of the environment was sufficient has been proved by medical knowledge to be inadequate to meet modern needs. I am the last person to under-estimate the necessity of good sanitation and adequate housing—which, indeed, must always remain the basis of public health reform—but it is significant to observe the growing disposition of Parliament to favour direct medical services which shall provide for the mother and infant, the widow and orphan, the industrial worker who is 'down and out,' the cripple and the disabled. Not less significant is the straightforward attack

which is being made upon special forms of disease, such as tuberculosis, dental decay, venereal disease, rheumatism and cancer. It is no longer held to be sufficient to reduce total death-rates. We are beginning to concentrate upon the actual morbid conditions which produce a premature death-rate, and this book sets forth the manifold means which are being applied to this end.

As there has been change and development in the problems to be faced, so there has been advancement in the methods of solution. For instance, there has been adjustment and readjustment of the actual machinery of Local Government, and there is still need for further changes in this direction; there has been a remarkable growth in the knowledge of the science and art of medicine in its application to communal health; there has been an ever closer association between the State and the medical profession in practice; and there has been a fuller appreciation of the fact that the life of one part of the Empire is dependent upon that of other parts, and of one nation upon that of other nations. All along the line new occasions have taught us new duties, and we are slowly though steadily learning the essence both of partnership and of interdependence. We have left behind us the days of the parish pump, and we are moving forward to the implications of imperial and international health. From the time of the establishment of the Ministry of Health in 1919 to the present, the Ministry has found itself inevitably concerned in these larger issues. The education and equipment of the medical man, for service overseas as well as at home, the investigation of the diseases associated with the

Tropics, on the mastery of which depends the prosperity of vast regions within the Empire, the ever-widening responsibilities of international co-operation in isolating or controlling the spread of affliction which know no frontiers—these are among the subjects in which we find ourselves directly interested to-day.

Looking to the future, I am disposed to think that the framework of public health organisation, if not already fairly complete, is at least so designed as to be capable of such adjustment as may be necessary from time to time to meet changing conditions of the future. The greatest need of to-day is the further education of our people, so that they may be able to take full advantage of the opportunities offered to them. There must, of course, be an alert and vigilant central authority, working hand in hand with the Local Authorities of Government; there must be a continual quest for new knowledge and the accurate investigation of causes and effects; but above all there must be the cultivation of 'the public health conscience' in the minds of the people themselves. Without their co-operation, willingly accorded by reason of their understanding of the meaning of their actions, the machinery of the health services cannot fully perform its functions. I hope that this book will inspire its readers to spread this knowledge and understanding where they still lag behind the times. In so doing, it will make its contribution towards the establishment of a healthier, and therefore a happier and more contented, population.

MINISTRY OF HEALTH,

29th July, 1927.

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CHAPTER I

THE JOY OF LIFE

THE common aim of man is to support himself and his family to the end. Beyond these essentials neither wealth nor victory is his real object, but the joy of life and service to his neighbour, the exercise of his faculties and senses and the delight in signs of their efficiency and use. Some delight more in the exercise, others in the attainment of results. Some seek spiritual results, some moral, some material. Some seek their own good, some the good of others. Some do not trouble how the results are obtained ; others care not at all about results or ends, but delight only, for themselves or others, in the present joy of life.

But none can delight either in the exercise of faculties or in the attainment of results without health of body, mind and soul. Health is the starting-gate for the race of life. It is symbolised by the healthy child in happy action. It is the first essential in a civilised State, where protection from violence and injustice is assured and the machinery of the common life is established.

The statecraft of public health, then, having due regard to the essentials, aims at the utmost joy of life and the greatest output of service for the greatest number of people. But in all classes and climes the essentials need first to be secure ; the joy of life is

absent where the spirit is crushed by oppression, grinding poverty or ill-health. Diplomacy and defence, the courts and the police, deal with the first ; law may do something, and the team-spirit more, to repair the second ; this book sets out to show how far law and good government can prevent the third, and give the individual scope and inspiration to use life to the full and enjoy it.

Health, like charity, begins at home. It is not a matter so much of outside as of inside conditions. 'The Kingdom of Heaven is within you.' The family is the unit of national life, and ill-health is the source of much family trouble. A false heroism often defies the demands of health, and ends in throwing a burden on others. It is everyone's duty, both to himself and to his neighbour, of set purpose to maintain health and seriously take note of the first signs of overstrain or disease.

A national policy demands health as a prime condition and duty of its citizens. For this it must provide the police work of sanitation, protecting individuals and households from each other in regard to filth, refuse and infection, so far as is necessary and is agreed as reasonable. It should assist the people to provide themselves with houses, pure food, water and air, and to discover and obtain treatment of disease. Where, as in town life, in schools and factories, and in the Services, the individual has little control of his circumstances, communal services, especially of inspection and regulation, are a necessity.

But research is of the first importance, if the changing demands of human life are to be compatible with health. Research work is starved. It is as

important as national defence ; it should be equally assured of full freedom of action, all necessary facilities and an adequate livelihood for its workers.

Above all is it necessary, in any system of public health, to throw responsibility back on to the individual and household to their utmost capacity ; to educate youth in habit, spirit and leadership even more than in actual knowledge ; to proclaim the gospel of healthy living and to give expert guidance throughout life, from ante-natal centres and schools to the grave. It stands to reason that the more the individual strives, the more apposite and intimate are the steps taken, the better the results, and the less the expense to the community. The system must be supple, and apply intimately to every individual, thus giving a special value in health matters to private agencies, which, so long as they are filled with enthusiasm for their several sections of the common task, may take more trouble than public authorities, give more encouragement to initiative and experiment, hit the mark more certainly, learn much themselves and pass their learning on. District nurses, voluntary hospitals, and the associations that maintain them, are outstanding instances of potent and useful work. In such fervent private enterprise there may be an apparent waste of effort, which indeed is not wasted. But associations that mislead, or fail in efficiency, or are worn out, are an impediment and must not be encouraged.

Where, however, and in so far as individual and private effort, whether for charity, limited dividend or profit, fails to secure the health of the people, State agencies are required as a guide and not a

prop, still less as a substitute for private effort and reasonable payment. School meals and medical relief are often essential to health ; but they must not be provided in relief of reasonable family liabilities, to become an indirect subsidy to wages. Social reform, properly devised, has nothing in common with Socialism.

The State must depend as far as possible on Local Authorities, intimately representing those concerned. They and the electorate must be allowed to learn at the polls the lessons of their mistakes. Stronger influences and wider fields of effort demand for certain tasks the more highly trained, detached and expert staff, institutions and resources of the County and County Borough or even of national authorities. The whole must be knit together by Government departments, responsible to Parliament. This was the design of the Ministry of Health Act, 1919. It has not yet attained the unity of command intended for it ; it may never do so. But the Home Office, Board of Trade and several other Ministries are directly concerned with vital aspects of the public health ; and a proper liaison between them, under the guidance of the Minister of Health, is as necessary as was the liaison between the allied forces and all arms in the recent war.

This book omits the important subject of housing, dealt with in a separate volume¹ by the present author. It omits certain other material factors, such as sewage and refuse disposal, as subjects of sanitary engineering, to be dealt with on analogous lines to those in Chapter VII. Limitations of space equally compel the exclusion of research, which,

¹ *The Housing of the Nation.*

under innumerable private and public agencies, cemented by the Medical Research Council under the Privy Council and the Cabinet Committee of Civil Research, is constantly laying the foundations of progress and correcting deductions and methods. The following chapters lay stress rather on the policy—more recently adopted, and of far greater value—of attention to the human factor, both as the chief agent in dissemination of disease and, through man's natural powers, as the supreme master of his fate ; on the importance of discovering and treating disease at the outset ; on the influence of mind over body ; and of spirit over both. Publicity and education of adults—but still more of the young—health visitors, clinics and district nurses, thus assume a first importance ; and man is helped to insure himself against ill-health with the help of his employer and of the State.

It is in the last chapter that we turn to the wider problems overseas, and realise to the full the transcendent forces of nature as affecting the activities and issues of life in more primitive and tropical conditions. It is here, in the assets of the British Empire, that we have scope for a veritable crusade, in the discharge of our national duties and the reaping of future harvests from our imperial estate. A new world opens before us. This chapter may help our race to realise its value, and secure its utmost happiness and utility.

It is in this sense that the book is offered as a guide, and perhaps a bait, to those who, as members of the British brotherhood, must answer for the public opinion, stirring or restraining it, in working out the vast issues of its private and public life.

CHAPTER II

THE HISTORY OF PUBLIC HEALTH ORGANISATION

THE social and educational services found their origin in the monasteries, which were dissolved in 1536-9. The consequent ferocious legislation under Henry VIII against sturdy beggars and rogues was replaced by four Acts, 1563 to 1601, under Queen Elizabeth, establishing a purely local system for relief of the impotent poor under overseers and justices of the peace.

After two centuries with little change, the appalling conditions of the factories led to special legislation and the gradual evolution of a separate administration for factories under the Home Office, while a Royal Commission resulted in the Poor Law Act of 1834, providing for Jeremy Bentham's principle of centralised control under three Poor Law Commissioners, succeeded in 1847 by the Poor Law Board. Edwin Chadwick (1800-90), barrister and founder of our system of public health, was appointed its secretary, although Disraeli considered him 'a monster in human shape,' and *The Times* regarded the new Poor Law as 'worse than Egyptian bondage.'

As cholera in 1831 had resulted in the Births and Deaths Registration Act of 1836, so smallpox resulted in the Vaccination Act of 1840, by which the

Guardians were to provide vaccination in every parish at the public cost. There was no need of compulsion; it was an obvious boon. A Royal Commission, which reported in 1844-5, led to the first Public Health Act of 1848, creating a Board of Health, not responsible to Parliament, with power to create Local Boards. The first Medical Officers of Health were appointed under local Acts—Dr. W. H. Duncan for Liverpool in 1847 and Mr. John Simon for the City of London in 1848. As a result of the cholera epidemic in 1853-4, Mr. Simon became in 1855 the first central Medical Officer of Government, retaining that office for twenty-one memorable years.

In 1853 vaccination became compulsory. By the Public Health Act of 1858 the medical duties of the General Board of Health were transferred to the Privy Council, other duties to the Home Office. The Medical Act of 1858 established the separate General Medical Council to deal with the status of the medical profession. In 1866 another epidemic of cholera led to the passing of Mr. Bruce's great Sanitary Act, whereby duties were thrown on Local Authorities to inspect, to provide, to suppress. As Simon put it, 'The grammar of common sanitary legislation acquired the novel virtue of an imperative mood.' In 1868, Disraeli appointed a Royal Sanitary Commission which, reappointed in 1869 by Gladstone, reported in 1871 in favour of a single Local Authority in every area both for public health and poor relief. In 1871 a Local Government Act accordingly constituted the Local Government Board, with Mr. Stansfeld as its president, merging in it the Poor Law Board, the Local Government Act Office, the

General Register Office and the Medical Department under the Privy Council. The Board was indeed a fiction, consisting of the eight principal Ministers of the Crown and the president, who probably never met, but in effect it functioned through its president, secretaries and staff. In 1872 a Public Health Act mapped the country into 1,468 urban and rural sanitary districts under elected councils, and made compulsory the appointment by every council of Medical Officers of Health and Inspectors of Nuisances.

Disraeli, at the Crystal Palace in 1872, had enunciated his '*Sanitas sanitatum, omnia sanitas*,' and, on coming into power, passed the great consolidating Public Health Act of 1875, which remains the charter of public health to this day. County Councils were created by the Local Government Act of 1888 under Lord Salisbury's administration, with a view to decentralisation, and were given certain powers of supervision, report and action in default, which are becoming of ever-increasing importance. The appointment of county medical officers of health, then instituted, became compulsory in 1909. A new minor authority was created by the Local Government Act of 1894 in the form of Parish Councils, whose sanitary powers, chiefly those of complaint, are rarely exercised. By this Act also the Rural District Councils were formally separated from the Guardians; but in fact they are still identical in *personnel*, the persons elected as Rural District Councillors acting also as Guardians of the poor.

In 1902, under Mr. Balfour's Government, the Midwives Act established State control of midwives

under the Central Midwives Board, giving the midwives the monopoly of their services in return. In 1907, by a Conservative amendment in the Upper House, the Education (Administrative Provisions) Act instituted the system of medical inspection in the elementary schools. In 1911 the National Health Insurance Act introduced a general system of medical treatment and of medical, sickness and maternity benefit for the wage-earning classes, through self-governing Approved Societies under Insurance Committees for each County and County Borough, independent of the existing local health machinery. This—a Liberal measure—was the last word in haphazard, overlapping, uneconomic sanitary development; and a constructive scheme of reorganisation became a necessity. The Royal Commission on the Poor Law had thrashed the matter out in their report of 1909 (see p. 77). In 1917 the Local Government Sub-committee of the Ministry of Reconstruction, known as the Maclean Committee, reported on the transfer of functions of Poor Law Authorities¹, and in 1918 the Haldane Committee on the machinery of government² reported on the whole problem of redistribution of functions of the several Government departments, including those concerned with the public health. Thereupon the Ministry of Health Act was passed in 1919, and Dr. Addison became the first Minister of Health. The Ministry, the final product of these eighty-five years of evolution, took over the functions, *personnel* and buildings of its predecessor, the Local Government Board, divesting itself only of a few relatively minor duties, such as those of roads and bridges, registration and

¹ Cmd. 8917.

² Cmd. 9230.

elections, public libraries, museums and gas undertakings. But there were added to it the functions of the National Health Insurance Commission ; of the Privy Council under the Midwives Acts ; of the Home Office relating to anatomy and infant protection ; and, by order in council in 1920, of the Board of Control for lunatics and the mentally defective.

There are still many important functions affecting the public health administered by other departments : those affecting medical research under the Privy Council ; health of school children under the Board of Education ; occupational diseases, factory and prison hygiene, and dangerous drugs under the Home Office ; health in the mercantile marine and in the mines under the Board of Trade ; health in the fighting Services, India and the Colonies ; and problems of health arising out of foreign relations. It is obvious that such responsibilities can never be administered by any one Ministry ; indeed, it would in most cases be disastrous if they were separated from the other related functions of the departments to which they at present, by accident or association, belong. But a proper revision of the health functions of all Government departments, and the institution of an effective liaison between them in a common effort under a common strategy, directed by the Minister of Health, is an imperative necessity of the times.

CHAPTER III

POPULATION

‘THE true greatness of a State,’ wrote Bacon, ‘consisteth essentially in population and breed of men,’ that is, both in numbers and quality. The object of ‘Public Health’ in the British Empire must be the provision and maintenance of as large and healthy a population of good quality as is possible within the limits of the recognised standards of living. And so it is of first importance periodically to number the people.

The Census

We have travelled far since, in 1753, a Bill for the numbering of the people was violently opposed as ‘subversive of the last remains of English liberty,’ and ‘likely to result in some public misfortune or an epidemical distemper.’ In 1800, however, an Act ‘for taking Account of the Population,’ was passed without opposition, and in 1801 the first census in this country was undertaken by overseers, under justices of the peace, and in Scotland by village schoolmasters, under the sheriffs, but there was no central control of the returns. The creation in 1834 of Poor Law Unions and in 1836 of Civil Registration Districts enabled the census of 1841 to be taken by the registrars under the newly appointed Registrar-General, the schedules

being filled up, not by officials, but by the householders. This system continues to the present day, a census, since the passing of the Census Act, 1920, being now automatically taken, usually in April, in every tenth year from 1921. The machinery is wholly central, independent of Local Authorities, and organised for England and Wales by the Registrar-General at Somerset House, employing the 1913 local registrars of births and deaths and 38,563 enumerators under them. The numerous facts thus ascertained are now compiled into a series of tables, issued in separate volumes, first for the several counties, then for special objects, such as occupations and industries. A corresponding census system has been in force in the most important parts of the Empire for nearly as long; and the census reports for India, with their studies of racial, social or religious distribution, are of exceptional interest.

Results of the Census

From these reports we find that the population of the United Kingdom increased from under 21,000,000 in 1821 to 47,000,000 in 1921, that of England (estimated in 1801 at under 9,000,000) having increased in the last 100 years from 11,250,000 to 35,500,000, that of Scotland from 2,000,000 to nearly 5,000,000, and that of Wales from 750,000 to 2,250,000; while that of Ireland fell from nearly 7,000,000 in 1821, and over 8,000,000 in 1841, to 4,200,000 in 1926, to which year the Irish census due in April, 1921, was deferred.

The intercensal increase of Great Britain in each decade since 1821 has been respectively 15, 14, 12, 11, 13, 14, 11, 12, 10 and 5 per cent.; while in

Ireland, decennial increases of 14 and 6 per cent. changed after 1841, owing to emigration, to decreases of 20, 12, 7, 4, 9, 5 and 2 per cent. in each decade to 1911 and 3.7 per cent. in the fifteen years to 1926.

By the census of 1921 the populations of the main areas of the British Empire are as follows :

	<i>Total</i>	<i>Per Sq. Mile</i>	<i>Excess or Deficiency of White Females</i>
England	35,681,019	701	+ 1,725,725
Wales	2,205,680	296	+ 10,496
Scotland	4,882,288	164	+ 187,213
Ireland (1926) ¹ ..	4,229,124	130	— 1,118
India	318,942,480	177	— 437,296 ²
Canada	8,788,483	2	— 5,162
Newfoundland ³ ..	263,933	51	— 94,086
South Africa ..	7,156,319	9	— 171,065
Australia	5,435,734	2	— 55,352
New Zealand ..	1,320,275	13	—

It is evident that, whatever views be taken of the congestion of population in England, there is endless room within the Empire for any conceivable increase of population for the next few centuries.

The economists⁴ see no reason why, within the next twenty years, the railways we are building with our spare capital all over the world may not increase the supply of food per head of the world's population. The policy of a White Australia and the development of our tropical empire alike depend on population.

But even in Great Britain there has hitherto been no case for those who would defend the

¹ Free State and Northern Ireland, computed.

² Deficiency of females of all races, 7,521,474.

³ Excluding Labrador, with pop. 3,621 or .03 per sq. m.

⁴ J. A. Hobson, in *The Declining Birth-Rate*, report and evidence before the National Birth-Rate Commission, p. 295.

declining birth-rate on the ground of over-population. In the half-century from 1861, amidst cries against over-population, while population increased by 78 per cent., wealth increased by 129; there was and is no clear relation between increasing population and unemployment; and with the growth of wealth the standard of living amongst wage-earners has been immeasurably improved and the assistance given to the depressed has been greatly increased.

The declining rate of *Actual Increase* depends on migration as well as on births and deaths. The outward balance of migration from Great Britain, as given in the Preliminary Report of the Overseas Settlement Committee for 1923, p. 32, was:

For 1871-81, on an average 26,000 a year.				
"	1881-91	"	"	82,000
"	1891-01	"	"	12,000
"	1901-11	"	"	76,000
"	1911-21	"	"	150,000 ¹
"	1921-26	"	"	97,500

NETT BALANCE OUTWARD ON TOTAL MOVEMENT TO AND FROM
UNITED KINGDOM.²

Nett Balance 1911-20 (inclusive)

1911	..	241,151		1921	..	125,153
1912	..	141,734		1922	..	100,077
1913	..	203,611		1923†	..	186,184
1914	..		- 108,688	1924†	..	75,018
1915	..		- 36,147	1925†	..	83,950
1916	..	1,832				
1917	..	13,298				
1918	..	14,850				
1919	..	152,642				
1920	..	167,858				

† Nett balance from 1st April, 1923,
Irish Free State figures excluded.

i.e. average per year, 1911-20 = 89,214.

The advantages of emigration to British boys and girls, suitably chosen, trained and shepherded into the new life overseas, can hardly be over-estimated. But for Australia or Canada to look to

¹ Including war deaths abroad.

² cf. Registrar-General's Statistical Tables, Part II., Civil, 1925, p. 79.

migration from the Mother Country to fill their vacant lands and discharge their human requirements is to look for impossibilities. There is one source only on which they can rely for an adequate British population, and that is on their own neglected but all-sufficient fertility.

Natural Increase is the number of births less deaths as registered. In the ten years 1911-21, 8,275,400 births were registered in England and Wales and 5,266,900 deaths, giving a natural increase of 3,008,500; or, if we deduct 560,000 non-civilian deaths abroad, of 244,850 a year—a great fall from the 404,487 a year in 1901-11.

The natural increase is best studied in the form of birth-rates and death-rates per 1,000 population, as published by the Registrar-General in his Annual Statistical Review. The most important figures are given by the Chief Medical Officer of the Ministry of Health in his Annual Report on the State of the Public Health.

The following average annual rates for England and Wales speak for themselves:

	<i>Birth-Rate</i> <i>per 1,000 pop.</i>	<i>Death-Rate</i> <i>per 1,000 pop.</i>	<i>Increase Rate</i> <i>per 1,000 pop.</i>	<i>Infant Mortality</i> ¹ <i>per 1,000 births</i>
1871-80 ..	35	21	14	149
1881-90 ..	32	19	13	142
1891-1900 ..	30	18	12	153
1901-10 ..	27	15	12	128
1911-20 ..	22	14	8	100
1921 ..	22	12	10	83
1922 ..	20	13	8	77
1923 ..	20	12	8	69
1924 ..	19	12	7	75
1925 ..	18	12	6	75
1926 ..	18	12	6	70

¹ Number of deaths in a year of infants under one year of age in proportion to 1,000 infants born during the year.

The rate of infant mortality has come down with a run since 1906, when it still stood at 132. It may be hoped ultimately to bring it down to 40, which is probably near the irreducible minimum, for a certain proportion of infants must always be born unequal even to the stress of a sheltered life. The death-rate, on the other hand, satisfactory as it looks, cannot permanently remain at its present low level, since a constant death-rate of 12 per 1,000 with a fixed birth-rate at whatever level would mean an average life of over 83 years for every child; whereas the mean duration of life (according to the actuaries' life-tables of 1901-10) is only 48½ years for male and 52 for female infants at birth, implying a death-rate of 20 per 1,000. The death-rate, indeed, cannot permanently and generally fall farther.

But there are no limits to the possible fall in the birth-rate. At present the nation is living on its reserves, taking ever greater care of every infant born, preserving it if possible through infancy, childhood and adult life. What then? Each census shows a shifting upward of the proportion of people at each age. Before long a larger proportion reach ages at which death becomes inevitable; fate has the healthy, slow-breeding nation by the heels; the death-rate is bound to rise again. Even so, in France the continued low natality has already retarded the fall of the death-rate, which stands now, with the birth-rate, at 18 per 1,000; since 1890 her population in numbers has been stagnant. 'When we say,' wrote the *Journal des Débats*, 'that the question is one of life and death, we are not making a phrase; we are simply expressing an impressive truth.'

It is strange how history repeats itself. 'In our time,' wrote Polybius, 'all Greece has been afflicted with a failure of offspring. . . . For when men gave themselves up to ease and comfort and indolence, and would neither marry nor rear children born out of marriage, or at the most only one or two, in order to leave these rich and to bring them up in luxury, the evil soon spread imperceptibly but with rapid growth . . . and there is no need to consult the gods about the modes of deliverance from this evil ; for the first thing we have to do is to change our habits, or at all events to enact laws compelling parents to rear their children.'

Polybius has diagnosed the present case, with this difference—that instead of infanticide we now preach and practise birth-control. It is a tremendous, revolutionary change, by which the nation is robbed of the fruit for which the sexual appetite was created. Whether such inventions are morally permissible or not, no religious body, except the Roman Church, has yet effectively decided. No one will deny that families should be limited by the will and ability of parents to provide for them. The danger, however, of birth-control—morals apart—is that its effect on the future population is both quantitative and qualitative. Those least fitted for parenthood will ever maintain their high birth-rate, while the prudent and able are learning and practising class suicide. In view of the acute divergence of opinion on this subject, successive Ministers of Health have refused to approve of methods of birth-control being prescribed in State-aided maternity clinics until Parliament so decides. The public may eventually demand that all public

institutions should give such advice where necessary. But the State must then insist on the larger view of the needs of the community being the dominant factor in the giving of such advice. A medical ethic is required which has not yet been threshed out. Otherwise, and in unwise hands, such publicity would only encourage the very habits that brought disaster to Greece and Rome.

Of Rome, wrote Sir John Seeley, 'The invincible power has been tamed by a slow disease . . . against this disease she was powerless; and the disease was sterility. Men were wanting; the empire perished for want of men.' Last year the Prime Minister struck the same trail in addressing the Classical Association. As Dr. Mackail had written, there were not enough Romans left to carry on the work of Rome. 'There are fears,' said Mr. Baldwin, 'among those who are responsible for Government to-day, taking grisly shape in the twilight—Rome has left danger signals along the road. It is for us to hear them.'

How, then, can we tackle the problem? The obvious method would be, as always, to revert to nature; to prevent the production, sale or use of the usual means of birth-control. This is surely impossible in Great Britain, although Signor Mussolini is attempting it in Italy. The next suggestion is to deal with the financial reasons that induce the prudent to practise self-control. The Finance Bill of 1909 gave to all incomes under £500 a year a relief of £10, to be free of income tax, for each child under 16; the Finance Act of 1920 increased this relief to £36 for the first and £27 for each of the others up to 16, or longer if in full-time education.

Again, the National Health Insurance Acts give maternity benefit of 40s., or, in the case of the employed and insured wife of an insured man, 80s., for the expenses of confinement, which is augmented by most Approved Societies by a further 6s. or so as an additional benefit.

But the dice are still loaded financially against every extra child brought into the world, especially under the growing system of a flat rate, so-called minimum, wage, generally fixed to meet the needs of a man with a wife and 3 children. This system is extravagant; for, on the contrary, only 13 per cent. of males over 20 have 3 or more children under 16; it is hard on the 37 per cent. of the children who belong to families of 4 or more children. Proposals have accordingly been made, and in all but four European countries adopted—as in France generally, in Austria universally and compulsorily, in Germany to an increasing extent, in Australia for Federal employees, in the British Army in the form of separation allowances during the war, to give only a few examples—in which employers contribute to a pool from which family allowances are paid according to the number of children in each family. In this country such a proposal would take the form of an extension of the National Insurance system. It must not be a dole; it must not deprive parents of their privileges and responsibilities in adding to the population.

But although this would to some extent relieve parents of the financial anxiety of bearing children, it would not ensure any increase of the birth-rate. The burden falls mainly, from conception to fledging, on the potential mothers. Relief must be

given them wherever possible. Parenthood, however, must always demand self-sacrifice, and young parents do not always realise the need for such sacrifice, either in their own interests or those of the lonely children or of the wider world. A change is required in the outlook of the rising generation ; an appeal should be made alike to their intelligence and to their higher selves, in the schools, in the Press, on pulpit and platform, and in private life, by the constant and outspoken influence of all who care for the future of their country in Church and State. For without an arrest and reversion of the decline in the birth-rate the British Empire is as a bronze statue with feet of clay.

CHAPTER IV

RECORDS OF BIRTH, SICKNESS AND DEATH

Registration of Births and Deaths

PARISH registers in England for baptisms, marriages and burials were instituted by Thomas Cromwell in 1538. The civil system in England and Wales was started in 1837 by the Births and Deaths Registration Act, 1836, and made compulsory by the Act of 1874, corresponding Acts being passed for Scotland in 1854 and for Ireland in 1880. A General Register Office for England and Wales, at Somerset House, Strand, was established under a Registrar-General, now a civil servant under the Minister of Health, who controls the work of the Superintendent Registrars, usually Clerks to the Guardians, with local Registrars for the several districts of each Union, appointed by the Guardians but supervised by the Superintendent Registrars. The Registrar-General issues an Annual Statistical Review of Births, Deaths and Marriages in two octavo volumes of tables and one volume of 150 pages of text. The latter is of especial interest for general reading, giving the variations in the several areas, at several ages and under several conditions, with fluctuations over long periods of years.

Registration of Live Births

It is the duty of the parents—in the case of an illegitimate child, of the mother—or of anyone in

attendance at the birth, or of the occupier of the house, to inform the Registrar of the particulars within forty-two days. But at the same time, under the Notification of Births Acts, 1907 and 1915, it is the duty of the father, if residing in the house, and of the doctor or midwife in attendance, to give notice within 36 hours to the Medical Officer of Health of the birth of any child born alive or dead after the twenty-eighth week of pregnancy.

Registration of Deaths

It is the duty of the nearest relatives present, or of others having knowledge of the death, or of anyone causing the body to be buried, to inform the Registrar, and sign the register within five days. At the same time, the informant usually hands to the Registrar the certificate which the doctor in attendance has to give, stating the cause of death to his best knowledge and belief. In 1920, 92 per cent. of all deaths were certified by registered medical practitioners and nearly 7 per cent. as a result of inquests, leaving 1.2 per cent. uncertified. The Registrar gives the burial certificate or a Coroner the order for burial; but burial may take place without either, in which case the person who buries must notify the Registrar within seven days.

Medical certificates are given to the relatives of the deceased, and are often written with the kindly intention of sparing their feelings in cases where certain habits or diseases have been a cause of death. Separate confidential certification of the cause, as distinct from the fact, of death has therefore been urged; but in view of the requirements of insurance companies, and of the reasonable desire of

relatives to see the certificate, the suggested secrecy is impracticable.

Again, it is urged that no body should be buried unless it has been inspected by a doctor after death. This, too, would seem to be impracticable as an invariable requirement.

But improvement is certainly needed, in the interests both of justice and of knowledge, as to prevalence and causes of disease. The fact that in the five years 1918-22 there were 31,332 deaths uncertified either by doctor or coroner have caused considerable anxiety and agitation for reform of the law. A Select Committee in 1893 was 'impressed by the serious possibilities implied,' and a Departmental Committee in 1910 reported that 'The present law of death-certification offers every opportunity for premature burial and every facility for the concealment of crime.' The Coroners (Amendment) Act, 1926, and the Births and Deaths Registration Act, 1926, stopped several gaps in the system, notably requiring the registration of stillbirths; and letters of inquiry from the Registrar-General do much to elucidate the causes of death.

Notification of Infectious Disease

For the protection of the public health, the most essential records are those of infectious sickness, the spread of which, unless systematically limited by State action, may cause the most appalling ravages. Notification by medical practitioners to the Medical Officer of Health of persons suffering from certain infectious diseases was introduced by the Infectious Diseases (Notification) Act, 1889,

subject to adoption by any sanitary authority for its area ; it was made compulsory for London¹ in 1891, and for the whole country² in 1899. Legally the relatives or householders are also bound to notify ; in practice this duty is omitted. Local Authorities have power, with the approval of the Minister, to add to the list of notifiable diseases, either temporarily or permanently. The Minister also has power under the Public Health Acts to issue regulations making other infectious or endemic diseases notifiable, either generally or locally. Thus tuberculosis was made notifiable in 1912, ophthalmia neo-natorum in 1914, encephalitis lethargica in 1918, dysentery, home-contracted malaria, trench fever and pneumonia in 1919 ; measles ceased to be notifiable in 1920 ; chicken-pox is added locally when smallpox appears ; diarrhœa when cholera is threatened. A weekly return is sent by the Medical Officer of Health to the County Medical Officer of Health and to the Ministry. The annual reports of these several officers thus contain the facts of varying prevalence of the several diseases essential to their prevention or reduction.

Notification of Industrial Diseases

Under the Factory and Workshop Act, 1901, Section 73, doctors attending cases of anthrax or of poisoning from arsenic, lead, mercury or phosphorus, contracted in a factory or workshop, must notify the Chief Inspector of Factories at the Home Office. The annual report of the Chief Inspector for 1924

¹ By the Public Health (London) Act.

² By the Infectious Diseases (Notification) Extension Act.

includes that of the Senior Medical Inspector, who reports with details 486 cases of lead (32 fatal), 5 of mercurial poisoning, 43 of anthrax (4 fatal), 123 of cancerous (24 fatal) and 45 of chrome ulceration and 3 of toxic jaundice, as well as 169,723 accidents (956 fatal) ; but no information on these industrial diseases or accidents is given to the Local Authorities or their officers or to the Ministry of Health. Some such liaison is needed.

Under the National Health Insurance Acts

The amount paid out in sickness and disablement benefit gives a useful index to the gross amount of sickness in 13,000,000 insured persons, constituting one-third of the population. These figures, which in general do not include the first three days of illness (for which benefit is not payable), show a total loss in 1925 of 25,000,000 weeks' work, or the equivalent of nearly half a million persons' work throughout the year.

In a recent scrutiny of a year's treatment of 903,000 insured persons in 400 representative areas, out of every 1,000 cases, 195 were due to bronchitis or 'cold,' 130 to influenza, 119 to diseases of the digestive system, 105 to injuries and accidents, 93 to lumbago and rheumatism. Accurate records of sickness would be invaluable ; but it is impossible to get such records from the National Health Insurance system, at least without a substantial increase of staff and expenditure.

In the fighting services a limited record of great accuracy¹ is available over a long period of years.

¹ See annual reports on the health of each Service.

Other records, such as those of the Friendly Societies, or of the Home Office under the Workmen's Compensation Acts, or of the voluntary hospitals, still more those of charitable and propagandist bodies, are subject to very variable conditions and definitions, and must be used with rigid caution. More detailed information is needed with regard to the causes of death and sickness; for it is on this knowledge that action for the prevention of death and sickness must ever depend.

CHAPTER V

ECONOMICS OF HEALTH

THE improvement of the public health is essentially an act of social philanthropy, urged by compassion for human suffering. But it is also a sound and sure instrument both of economic development and of insurance against economic loss, promoting efficiency and man-power and reducing risk.

A profit and loss statement would show on the debtor side the five items : (1) To loss on patients' work ; (2) To lesser efficiency of those at work ; (3) To cost of care and treatment ; (4) To indirect loss in industry from epidemics ; (5) To cost of maintenance of public health services. On the creditor side it would show the profits : (1) By lives saved ; (2) By longer life.

Loss

(1) *Loss of Patients' Work.* A definite measure of sickness and disablement is provided by the system of National Health Insurance, covering over one-third of the population. In 1925 there were 13,695,000 insured persons entitled to benefit ; sickness or disablement benefits were paid for 25,000,000 weeks' incapacity, equal to the loss of 480,770 years' work or the loss of the whole year's work of 480,770 persons.

Adding loss from the first three days of sickness,

for which benefit is not commonly payable, this amounts to the loss of over half a million persons' work, or 4 per cent. of the whole. A corresponding loss will have occurred amongst the non-insured; and the whole national income derived from personal services will therefore have been reduced by 4 per cent. Estimates of the national income range from £3,000,000,000 to £4,000,000,000, one-third due to yield of capital, two-thirds to personal services. Taking the latter at £2,000,000,000, the loss amounts to 4 per cent. of that sum, or £80,000,000 in the year 1924. If Exchequer receipts from personal services be put, on a conservative basis, at £100,000,000 out of the £800,000,000 of Budget income, the loss to the Exchequer alone in 1924 was £4,000,000.

(2) Furthermore, the loss from ill-health due to the lessened efficiency of those working, including those engaged in management, invention and direction of enterprise, is considerable, as every human being knows—probably as much again, another £80,000,000 to the national income and £4,000,000 to the Exchequer.

(3) *Cost of Care and Treatment of Sick and Disabled.* Since out of the insured, amounting to one-third of the population, there were, on an average, half a million sick or disabled throughout the year, the number of sick or disabled in the whole of England and Wales should be taken as 1,500,000, i.e. half a million in institutions (532,025 less staff at census 1921) and a million at home. The annual cost of maintenance of such institutions and of the half-million patients at £100 each would be £50,000,000.

The cost of the million sick at home includes the

services of professional attendants (i.e. 193,406 by census 1911, less 71,880 in institutions)—say 120,000, at an average cost of £200—£24,000,000.

The loss of work of 193,406 persons in attending on the sick, reckoned as 1/200th of the population, further causes a loss by 1/200th of the national income from personal services, viz. £10,000,000 a year.

(4) *Cost of Indirect Loss to Industry from Epidemics.* Sickness of any person may have far-reaching effects on those associated with him or dependent on him. In the presence of epidemic disease, moreover, the restrictions on movement and marketing, on industry and education, involve considerable losses. Smallpox in 1871-2 cost Philadelphia a definite \$22,000,000; yellow fever in 1878 invaded 132 American towns, and cost the country a clear \$100,000,000. The restrictions and precautions taken to prevent the smouldering embers of ever-present infectious disease from breaking out into conflagration are a wise but costly system of insurance, the expense of which cannot be estimated.

(5) The net expenditure on public and school health services by or through the Local Authorities in the year 1924-5 was as follows:

Public Health Services	£	43,867,297
Public School Health Services . .		3,200,000

Profits

(1) *By Lives Saved.* The death-rates for England and Wales, standardised for age and sex to make them comparable, in the years 1851-5 gave an average of 21.7 per 1,000. If this had been the death-rate in 1923, there would have been 833,345 deaths. In fact, the death-rate was 11.6, and the

ANNUAL LOSS :

	£
(1) To loss of patients' work	80,000,000
(2) To lesser efficiency of others	80,000,000
(3) To care and treatment in institutions	50,000,000
To care and treatment at home	24,000,000
To loss of work on those in attendance on the sick	10,000,000
(5) To public health services	43,900,000
To school health services	3,200,000
Total ..	<u>£291,100,000</u>

To this should be added the cost of indirect losses from disturbance of industry and transport and effect on morale, not limited to the time of epidemic, bringing the total cost of sickness, say, to £300,000,000 a year.

How much of this loss is preventable? Professor Fisher, of Yale, defines as preventable that amount of sickness which would be prevented 'if knowledge now existing among well-informed men in the medical profession were actually applied in a reasonable way and to a reasonable extent.' At least a third of the prevailing sickness, reports Professor Fisher, is preventable.¹

The adverse balance of £23,000,000 is being gradually reduced. The greater the income from the improvement in general health, the less will have to be the expenditure. Effective outlay on improvement of the public health is good business, whenever the money is available and the *personnel* and organisation are equal to the work; not otherwise.

These conclusions are respectfully offered to all Chancellors of the Exchequer, officials of the Treasury, and economists; the qualifying conditions to social reformers of all brands.

¹ Report on National Vitality, prepared for the National Conservation Commission, 1909, p. 114.

CHAPTER VI

HEALTH AUTHORITIES AND OFFICERS

LOCAL GOVERNMENT is a normal growth from the natural grouping and aspirations of the people, and is no cut-and-dried product of a scheme imposed by the legislature. Hence the difference from many foreign systems of Local Government ; hence its vagaries and inconsistencies ; hence its very pliability and effective value in dealing with so intimate a human problem as that of the public health.

The Central Authority

In Chapter II. we traced the ancestry of the Local Government Board, up to its birth in 1871, and its career up to its replacement by the Ministry of Health under the Act of 1919. By this Act the powers and duties of the Minister are 'to take all such steps as may be desirable to secure the preparation, effective carrying out and co-ordination of measures conducive to the health of the people.' Power is given to transfer to him, by Order in Council, the powers and duties of the Ministry of Pensions and of any Government department relating to the health of the people ; and, on the other hand, to transfer from him to other Ministers matters not relating to health.

Health in schools is still managed by the Board of Education on behalf of the Minister of Health,

who approves the schemes and grants made for the purpose, the present Chief Medical Officer of the Ministry serving also in the same capacity to the Board. The Medical Research Committee, which resulted from the National Insurance Act, 1911, was not transferred to the Ministry, but to the Privy Council, the department already concerned with other forms of research, and not limited, as is the Ministry of Health, to England and Wales.

The functions, therefore, of the Ministry group themselves under six heads : Public Health, Housing, Health Insurance, Poor Law, the machinery and finance of Local Government and the Welsh Board of Health. For these duties it has administrative, technical, general and accountancy staffs, an insurance department and a legal division, with a total *personnel* of 5,384, including 103 medical officers. The estimates for 1927, including £9,500,000 for housing and £6,000,000 for health insurance, run to nearly £20,000,000.

This sum includes large grants in virtue of which the Minister, being responsible to Parliament for the proper expenditure of the moneys voted, obtains much of his power over Local Government.

A still more vital hold over local administration is derived from the Exchequer payment—which does not figure in these estimates—of half the salary of Medical Officers of Health and Sanitary Inspectors—under £400,000—subject to the terms of each appointment being approved by the Minister and to his duly receiving the annual reports and returns which he requires.

Approval of the Minister is also, in general, required for works and schemes to be paid for by

loan. A public inquiry, duly placarded and advertised, is first held in the locality by an inspector of the Ministry, at which any parties or individuals interested may be heard in person or by counsel ; and, often after much correspondence, the Minister gives or withholds his assent.

The process is invaluable in securing the wisest expenditure of public moneys, both in principle and in detail ; in safeguarding public and private rights and liberties ; in educating the public in self-government, and in securing that general support and co-operation without which no real improvement in the public health will result.

The Local Authorities

These were originally the civil parish under the vestry and overseers, dating from the Poor Law of 1601, the petty and quarter sessions, and, by 1832, 246 Municipal Boroughs, which had been incorporated by Charter and were governed by an oligarchy of mayor, aldermen, councillors and burgesses. By the Poor Law Amendment Act of 1834 and the Municipal Corporations Act of 1835 a beginning was made in the standardisation of Local Government.

The Public Health Act of 1848 gave power to urban areas to set up health authorities ; the Public Health Act of 1872 established a complete system of urban and rural districts, with Borough or District Councils in every urban area, and the Boards of Guardians in every rural area, as the Local Sanitary Authorities. The Local Government Act of 1894 created Parish Councils and Rural District Councils, theoretically separate from the Guardians. The

Local Government Act of 1888 created the County Councils.

The County Authority

The County Councils—50 in number in England, 12 in Wales—consist of councillors elected every three years, and of one-third as many aldermen, elected by the councillors every six years. They meet seldom oftener than once a quarter, or for more than a few hours at a time ; but they do a great amount of work through committees, with a permanent staff of officers of high standing and experience. Most of their health work is done through the Public Health and Housing, Education, Maternity and Child Welfare, Visiting (for Lunacy) and Mental Deficiency Committees.

Their functions respecting the public health were at first little more than to administer the Rivers Pollution and the Sale of Food and Drugs Acts, appointing for the latter purpose Public Analysts. They were given power, now made a duty, to appoint County Medical Officers of Health, on whose report they could represent Local Authorities as in default.

In public health they were, in effect, minor central authorities, not major local sanitary authorities ; nor are they technically such, even now. But most new public health measures since 1888 have been entrusted to the County Councils in whole, in part or in default of the Sanitary Authorities—housing and town-planning in particular, in case of default, with power to house their own employees, to secure improvement of rural workers' houses, and to give grants to building societies and public utility societies. They administer the Lunacy, Mental

Deficiency, Welfare of the Blind and Midwives Acts, and in many parts of their areas the Maternity and Child Welfare and notification of Births Acts ; as Local Education Authorities they carry out the vitally important health policy in the schools ; they administer the schemes for venereal disease and tuberculosis ; they issue licences for the production of Grade A milk ; they inspect, receive reports, supervise and have power to report default to the Ministry over the whole range of health duties of the Local Sanitary Authorities.

In effect, few defaults are thus reported. But the power is invaluable ; it enables a tactful and experienced officer almost always to give the helpful advice required in the right quarter and on the right occasion so as to be most effective ; and with patience and determination, and with occasional friendly pressure from the Minister, a steady all-round improvement in local sanitary administration and in its effects is generally maintained and admitted.

But much remains to be done ; and it is not only in the rural and smaller urban councils that mistakes and backwardness are found.

The Local Sanitary Authority

The Local Sanitary Authorities, technically so known, include the Councils of 82 County Boroughs, independent of County Councils—towns with a population usually of over 50,000 inhabitants (none in future to be created without a minimum population of 75,000)—entrusted with the powers both of a County Council and of a Local Sanitary Authority.

They include the Councils of 247 non-county

Boroughs or Municipal Boroughs incorporated by Charter, with populations varying from 1,000 in Montgomery to 90,000 in Hornsey, none being now created with less than 10,000.

Then there are the Councils of 791 Urban Districts, with populations usually of 3,000 to 20,000, but varying from 246 in Kirklington-cum-Upsland to 167,000 in Willesden; and 648 Rural Districts, sometimes with large suburban or mining populations, such as Chesterfield with 76,000.

Finally, we have the Councils of the 27 Metropolitan Boroughs of London, with the City of Westminster, and, for most purposes independent of the L.C.C., the City of London with a population by night of 14,000, by day of 437,090, the others varying in population from 43,000 in Holborn to 345,000 in Wandsworth. London Authorities work under the more stringent and more detailed Public Health Act (London), 1891, in which the Councils of the Metropolitan Boroughs and Cities of London and Westminster are the Local Sanitary Authorities, but the County Council is responsible for main drainage, as well as for education, midwives, the larger housing and slum clearance schemes and the other health functions of any County Council; a separate statutory Water Board is responsible for water supply, a separate Asylums Board for infectious disease and mental hospitals.

These are the authorities entrusted with the local safeguarding of the material conditions of health, viz. water supply, sewerage, the prevention of nuisances, housing, the maintenance of sanitary conditions in common lodging-houses, workshops, bakehouses, dairies and milk-shops, canal-boats and

other premises, the prevention and treatment of infectious disease, and the safeguarding of food-supplies.

The exercise of town-planning powers is obligatory in all urban districts with a population over 20,000 ; and certain of the larger areas administer their own maternity and child welfare and school medical service schemes. Sanitary Authorities in general, however, have nothing to do with Health Insurance or Poor Law or with health in factories, mines or ships. The Local Sanitary Authorities are elected for three years, one-third each year except in London, where they are all elected every three years. The municipal vote is one of the main factors by which public opinion has a positive or negative influence on the public health.

Parochial Committees, appointed by Rural District Councils in respect of particular, especially rapidly developing, parts of their area, act as agents of the District Council, with such powers as may be delegated to them.

Seventy-two Port Sanitary Authorities, constituted by order of the Minister, exercise sanitary jurisdiction over shipping, to ensure the exclusion from abroad of infectious disease and the soundness of imported meat and other foods, while supervising the health conditions on shipboard for passengers and crew. They and their officers are naturally in closest relations with the Local Sanitary Authorities of the port towns, the same Medical Officers of Health commonly serving both.

Seven thousand two hundred Parish Councils, amongst 12,850 rural parishes, are elected every third year by the Parish Meeting or by poll. They

have duties with regard to allotments, open spaces, wells, ponds and ditches ; and power to apply for urban powers and to represent the Rural District Council as in default.

Parish Meetings of all Local Government electors in the remaining 5,650 rural parishes have powers as to allotments and, for populations over 100, may resolve to have a Parish Council.

The Chief Officers : Medical Officers of Health

The appointment of these officers, first made at Liverpool in 1847 and in the City of London in 1848, became compulsory in all districts in 1872, in all counties in 1909. County medical officers must be whole-time administrators. The others may be specialists devoting their 'whole time' to the public service, or may be general medical practitioners combining 'part-time' public work with private practice, prevention with cure, public health with individual treatment. The larger authorities often also employ several assistant medical officers of health, one or more being commonly women. To enable the smaller districts to employ specialists, combined sanitary districts may be formed ; but such combinations exist only for the appointment, and are often unsatisfactory. Latterly the multiplication of health duties under County Councils, involving the appointment of several assistant medical officers, has enabled District Councils to have their Medical Officers of Health appointed assistant officers on the county staff, detailed by the County Council for school work and other duties in their area, in addition to their duties as district Medical Officers of Health, thus forming an effective

link between the county and district authorities. But character, public spirit and common sense often make admirable officers of the local private practitioners, despite the claims of their private practice. A Diploma in Public Health, requiring twelve months' intensive and specialised training in addition to the minimum five years of general medical training, is a necessary qualification for future appointment, but may be dispensed with by the Minister. In 1873 about one-fourth, now about one-third, of the appointments were for whole time. Whole-time officers have security of tenure ; others now hold office from year to year without reappointment, terminable at three months' notice. An improved scale of salaries, according to status and population, has now been approved by the Minister, and many authorities have adopted contributory schemes to provide retiring pensions for their officers at sixty-five. These are essentials of satisfactory service, without which it is impossible to attract men of sufficient professional status and general education adequately to fulfil the immensely varied and difficult responsibilities of posts on which the health of the nation depends.

Sanitary Inspectors

'Whole' or 'part-time' Sanitary Inspectors are appointed by every Local Sanitary Authority ; in rural districts they often act also as surveyors, and have frequently had no training in sanitation but that of untutored experience.

The Sanitary Inspector acts under the general supervision of the Medical Officer of Health, and is of essential value in securing and maintaining the

material standard and carrying out the spade-work of sanitation. Special appointments are also made, as required, e.g. of meat inspectors, for which special training and certificates are provided by the Royal Sanitary Institute.

Health Visitors

The optional appointment of health visitors is a recent invention, dating from the Notification of Births Act, 1907, when they were appointed by Local Sanitary Authorities to visit new-born babes ; in 1925 there were 3,878 so employed for whole or part-time work. In the homes of the people, in maternity and infant welfare centres, in the schools, school clinics, dental clinics and tuberculosis dispensaries, in making special inquiries, assisting children especially to secure treatment, sometimes trained as a sanitary inspector, hospital nurse or midwife, often serving also as district nurse-midwife, the health visitor is a natural successor to the parochial 'district visitor' of the last century. Government grants are given for training ; and from 1st April, 1928, whole-time health visitors appointed for the first time must be fully trained nurses, holding the certificate of the Central Midwives Board and possessing the special health visitors' certificate issued by the Royal Sanitary Institute under conditions approved by the Minister of Health. The potential influence of the health visitor for good on the health and welfare of the people is incalculable.

Surveyors and Engineers

These play an essential part in maintaining the public health through their responsibility for

sanitary engineering and sound construction in connection with sewage-disposal, sewerage and drainage, refuse destruction, water-supply, schools and hospitals, housing, town-planning and roads.

Other Officials

Amongst other technical officers may be noted the public analysts under the Sale of Food and Drugs Acts, veterinary surgeons, valuable to the public health especially in connection with dairy-cows, sometimes also employed as meat inspectors, and a host of subordinates, from laboratory attendants to rat-catchers.

Finally, let it not be forgotten that the work of technical health officials and their authorities depends essentially on the convinced and whole-hearted services of the clerks and the clerical staff of every office. The clerks of an authority hold the master key ; and to many should be given a large share of the credit for progress made, in the face of financial and legal difficulties and frequent narrowness of vision in the councils whom they loyally serve, inform and often inspire.

CHAPTER VII

PURE FOOD AND WATER, MEAT AND MILK, LIGHT AND AIR¹

Water

WATER, polluted with germs, has often given rise to sudden and disastrous outbreaks of enteric fever, cholera, dysentery or diarrhoea. Lead poisoning may arise from the passage of a moorland water through lead pipes. Hard waters, especially those from the chalk, cause much damage to pipes and boilers and are very wasteful of soap.

Towns require a daily supply of thirty gallons per head; industrial towns up to fifty. In London, eight companies were superseded in 1904 by the statutory Metropolitan Water Board, whose duty it is to ensure delivery of a sufficient and wholesome supply, with direct powers bestowed on it by Parliament. In London, absence of water is a 'nuisance,' and absence of proper fittings makes a house (or, by L.C.C. General Powers Act, 1907, a separate tenement) unfit for habitation.

Elsewhere, without interfering with the duty of

¹ The law on the subject is mainly contained in the Public Health Act, 1875; Rivers Pollution Prevention Act, 1876; Public Health (Water) Act, 1878; Public Health (London) Act, 1891; the private Acts of water companies; the Contagious Diseases (Animals) Acts; the Milk and Dairies Consolidation Act, 1915; the Sale of Food and Drugs Acts; the Pharmacy Acts; the Dangerous Drugs Acts; and the Public Health (Smoke Abatement) Act, 1926; with the consequent Orders and Regulations of the Ministry and Byelaws of the Local Authorities.

water companies under private Acts of Parliament to supply their areas, Sanitary Authorities may themselves provide supplies ; may require an owner to supply his house, if water be available at a reasonable rate ; may prevent pollution and close wells ; and must provide a fresh supply, if danger to health arises from insufficiency or unwholesomeness of the existing supply and it can be done at a reasonable cost ; otherwise complaint may be made to the Minister. An Urban Sanitary Authority must cause a supply for extinguishing fires to be maintained. It is the duty of every Rural and of any Urban Sanitary Authority, if so ordered by the Minister, to require the provision of a supply within reasonable distance of every occupied house, or, in default, to provide the supply themselves. Houses erected or rebuilt in rural areas must have a sufficient supply and be given a certificate to that effect before they can be occupied. The Sanitary Authority has the duty—shared since 1888 by the County Council or by Joint Boards of County Councils—of keeping rivers free from sewage or solid refuse, noxious liquids or solids from mines or harmful trade-effluents, subject in the latter cases to the approval of the Minister. Pollution of streams, ponds and watercourses, and polluted wells and cisterns, are dealt with by the Sanitary Authority.

Pure Food

Pure food in general depends for its soundness on the Public Health Acts, 1875 and 1890 ; Public Health (London) Act, 1891 ; Public Health (Regulations as to Food) Act, 1907 ; Sale of Food and Drugs

Acts, 1875 and 1899 ; and on regulations dealing with Public Health (Meat), 1925 ; Public Health (Imported Food), 1925 ; and Public Health (Preservatives, etc., in Food), 1925. Food for sale is constantly under inspection by the Medical Officer of Health or Sanitary Inspector, who may seize any believed to be unwholesome, and apply to a justice to order its destruction and obtain a penalty. Imported food is inspected by officers of the Port and Riparian Sanitary Authorities.

Certain classes of meat may not be imported without an official certificate of freedom from disease given in the country of origin, and recognised as satisfactory by the Minister ; no food may be imported if found *unsound* by a competent authority ; and the Medical Officer of Health may apply to a justice for the condemnation of any food which appears on examination to be unfit.

Slaughter-houses

Good meat obviously depends, in the first place, on its condition in the slaughter-houses. Municipal abattoirs are the ideal, and should become general in urban areas ; private slaughter-houses, however, are the rule, and much improvement is required both in the condition of their premises and their management. It is only the slaughter-houses of comparatively recent origin that are subject to annual renewal of licence by the Sanitary Authority, and hence to the more stringent sanitary conditions always attached to such licences. Sanitary authorities may be allowed to use a meat-mark for meat which has been inspected and passed ; and provision is made for the protection of meat from

flies and dirt in stalls, shops and stores, and for proper conditions of handling and transport. Model by-laws, issued by the Ministry, deal with licensing, registration, inspection, prevention of cruelty, cleanliness and provision of water in slaughter-houses.

One by-law, adopted now by several Sanitary Authorities, requires stunning of animals by a mechanically operated instrument before slaughter, excepting only the animals slaughtered by the Jewish method under licence from the Chief Rabbi. The adoption of 'humane slaughtering' was recommended, except for sheep and pigs, in 1925, by a committee appointed by the City of London; but it is still opposed by most butchers and by some friends of animals.

Protection of Food from Adulteration

This, and the improper use of preservatives and colouring matter, depends on the Sale of Food and Drugs Acts, administered by the councils of quarter-session boroughs and of counties. Food Inspectors purchase samples, and, after giving part to the seller and retaining part as a 'control,' send a third part to the Public Analyst appointed by the Borough or County Council. In 1925, 118,930 samples were thus examined, including 61,909 samples of milk, 11,201 of butter and 5,175 of drugs; 6.5 per cent. were found adulterated. Abstracts of the reports, with extracts from the Annual Report of the Ministry on the subject, are published separately for 1s. The Ministries of Health and of Agriculture have similar powers to take samples for examination by the Government chemist and to enforce the Acts if the Local Authorities fail so to do. Imported

food is similarly protected by the Commissioners of Customs. The Regulations of 1925 prohibit from 1st January, 1927 (or, in certain particulars, six, twelve, or eighteen months later), certain injurious colouring matters and all preservatives, except sulphurous and benzoic acids in the specified foods and drinks.

Improvement of the food-supply must depend on such further investigation as is recorded in the reports of the Medical Research Council and of the Food Investigation Board under the Department of Scientific and Industrial Research, which show practical results of considerable commercial value.

Milk

But of all foodstuffs, as a potent instrument both of nutrition and of disease, none is equal to milk. In food value a quart of milk is equal to nine eggs, or 1 lb. of beef, or $1\frac{1}{2}$ lb. of fish or poultry. Its digestibility and its vitamin content further enhance its value. On the other hand, milk is subject to much handling, and is an excellent food for microbes.

Of twenty samples from London dairies, only two had less than 100,000 and ten had from 7,500,000 to 365,000,000 microbes per cubic centimetre. Small wonder that outbreaks, often of hundreds of cases, of enteric and cholera, diphtheria and scarlet fever, sore throat and epidemic diarrhoea, have often been traced to contaminated milk. The germs of tubercle are found in 8 per cent. of milk samples—in 5 per cent. in London last year, 10 in Liverpool, 18 in Plymouth; one in forty of our cattle are officially reported to be tuberculous, and some 3,000 British children die annually of drinking tuberculous milk.

The essentials, then, of the milk-supply are that it be cheap and plentiful, clean and free from the germs of tubercle. In 1926 there were 2,749,286 cows and heifers with calf ; in 1925, production was 1,117,100,000 gallons, of which 886,000,000 gallons were consumed as liquid milk. The problem concerns the health both of man and of animals, and the Ministries, therefore, both of Health and of Agriculture. At the farm it involves care in the health, management and breeding of the cattle ; attention to building, equipment and water-supply ; to the milkers and their methods ; to proper treatment of the milk and proper supervision throughout. In transit it depends on speed, protection and coolness, on sealed churns or bottles kept at a temperature of 40 degrees F., with the unsatisfactory alternatives of the addition of chemical preservatives (now forbidden), heating, condensation and drying. At its destination the chief need is for proper storage of the milk.

The main public inquiries into the subject, since Koch discovered the tubercle bacillus in 1882, have been those of the two Royal Commissions on Tuberculosis (1895-8 and 1906-11) and two Departmental Committees under Lord Astor, in 1912 and in 1917-19. The reports contain most of the information required.

The law on the subject, in addition to the Acts and Regulations cited on p. 44, is contained in Diseases of Animals and Contagious Diseases (Animals) Acts and the Milk and Dairies Consolidation Act, 1915, postponed till 1925, in the consequent Tuberculosis Order, 1925, by the Minister of Agriculture, and, by the Minister of Health, the

Milk (Special Designations) Order, 1923, Milk and Dairies Order, 1926, the Public Health (Prevention of Tuberculosis, Regulations, 1925, and the Public Health (Imported Milk) Regulations, 1926.

Local Authorities have the power to stop milk-supplies causing outbreaks of infectious disease. The addition of preservatives to milk or cream is now forbidden, and all the powers and duties of Local Authorities with regard to unsound food apply to milk as to other articles of food. Regulations issued by the Ministry of Agriculture declare milk not to be genuine unless it contains at least 3 per cent. of butter fat and 8.5 per cent. of other solids (8.7 per cent. in the case of skimmed milk), nor must there be more than 16 per cent. of moisture in butter.

The Tuberculosis Order of 1925 provides for notification and slaughter of dangerously tuberculous cattle as the first step to the eradication of tuberculosis. The Royal Commission had reported in 1907-8 that much fatal human tuberculosis was of bovine origin, and that tuberculous cows, even without tuberculosis of the udder or general emaciation, might infect both their milk and faeces. An International Congress in Washington in 1908 emphasised these facts. Tuberculosis Orders were accordingly issued in 1913, 1914, and, after suspension during the war, finally in 1925. By this Order the owner must notify to a constable or Veterinary Inspector of the County Council or County Borough Council any cow apparently suffering from chronic disease of the udder, tuberculous emaciation or chronic cough, with other signs of tubercle. Such a cow must be isolated; her milk must be boiled

and used only for feeding animals. The County Council or County Borough Council must direct a Veterinary Inspector at once to inspect and report. He may similarly inspect and deal with any suspected cow in a market or sale yard ; with the owner's consent, he may apply the tuberculin test. If tubercle is diagnosed, the cow is valued, slaughtered and examined post-mortem. If no tubercle be found, compensation is paid at £1 over full value ; if only slight tubercle be found, at three-quarters, with minimum 45s. ; if advanced, at one-quarter, with 45s. minimum. Previous notice of slaughter must be sent to the Sanitary Authority, who can then supervise disposal of carcase. The Minister of Agriculture pays 75 per cent. of the compensation.

In the twelve months of 1926, 17,348 cattle were slaughtered under this Order, and of the £62,264 paid in compensation, £47,448 were paid from the Exchequer, £15,816 from the rates, which in return received £15,597 in salvage. Ninety-nine per cent. were found suffering from tubercle, 72 per cent. in an advanced stage, 12 per cent. of the udder.

This Order is the corollary of the Milk and Dairies Consolidation Act, 1915, which, postponed during the war, was finally brought into operation in 1925.

This Act empowers the Minister of Health to make Orders as to the conduct and control of the milk trade. If any milk is likely to cause tubercle, the Medical Officer of Health is to notify his colleague in the producing county, for him to take action. It is an offence knowingly to sell milk from a tuberculous cow. Samples are enabled to be taken in transit or delivery ; and the plea of warranty,

by which the middleman may escape responsibility for adulteration or pollution, is limited. Under this Act, the Minister, with the concurrence of the Minister of Agriculture, has issued the Milk and Dairies Order, 1926, which constitutes the modern code for the healthy management of the trade from cow to lip. Part IV., in respect of the health and inspection of cattle, is administered by County or County Borough Councils or by non-county Borough Councils, if so ordered by the Minister; the remainder by the Sanitary Authorities.

By the Public Health (Prevention of Tuberculosis) Regulations, 1925, the employment of infectiously tuberculous persons in the handling of milk is prevented, and provision is made for compensation. Further regulations prescribe methods of labelling, and standards for dried milk and for condensed milk. By the Milk (Special Designations) Order, 1923, an attempt is made to encourage the production of better milk, either as 'Certified Milk' (bottled on the farm, containing under 30,000 organisms per c.c., from cows inspected and tuberculin-tested every six months); or 'Grade A (Tuberculin-tested) Milk' (bottled before distribution, containing under 200,000 organisms per c.c., from cows inspected and tested every six months); or 'Grade A Milk' (of same standard, but from cows inspected by a veterinary surgeon every three months and not tuberculin-tested); or 'Pasteurised Milk' (heated for half an hour at 145-150 degrees F. and then cooled to 55 degrees F.; containing less than 100,000 organisms per c.c.). Licences for the production of the first two grades are given by the Ministry of Health; for the third by County

Councils and County Borough Councils; and all for retail by Local Sanitary Authorities. The number of such producers' licences in December 1926 was respectively 120 for 4,250 cows, 132 for 4,850 cows, 258 for about 5,000 cows, i.e., 510 for producing, and 2,819 for distributing, some 7,500,000 gallons of specially designated milk; and 99 licences for pasteurising, and 591 for distributing, from 15,000,000 to 20,000,000 gallons of pasteurised milk a year. In 20,240 tuberculin tests on 9,100 cows in 1926, 1,264 reacted.

Further regulations prescribe methods of labelling, and standards for dried milk and for condensed milk, while, by Public Health (Imported Milk) Regulations, consignees of imported milk must be registered, and such milk must contain less than 100,000 organisms per c.c. and no tubercle bacilli, power being given to remove names from the register.

The outstanding facts are that the average consumption of milk in this country is about half a pint per day, as compared with a pint in the U.S.A.; that 1 per cent. of the milk in winter and 2 per cent. in summer is wasted by souring—a loss only to be prevented at the present time by proper pasteurisation at a cost of $\frac{1}{2}d.$ per gallon, or nearly £2,000,000 per year for the whole British supplies; that dirty, tuberculous milk fetches the same price as clean, non-graded milk; that more than half the supply of milk and milk products is imported, when agriculture is in desperate straits. Quantity, indeed, and price are of first importance as well as quality.

The solution of the problem will depend on strict administration, on the advance and better use of veterinary surgery, on reduction of price by

economies in distribution, and on the public enlightenment of all concerned, by lectures, discussions and clean milk competitions, in agricultural colleges and institutes and dairying classes, in the Press, and not least in the schools and amongst the teachers of the rising generation, for until the public are prepared to pay a higher price, as and when due, for pure milk, than for dirty, tuberculous milk, the farmers cannot be expected to provide it.

Drugs

The purity of drugs and beverages is ensured by the Sale of Food and Drugs Acts (see p. 46). The proper dispensing of drugs depends on the Pharmacy Acts. The first, in 1852, created a register of examined pharmaceutical chemists; the second, in 1868, created a second register of chemists and druggists, and made it unlawful for anyone else to sell certain scheduled poisons. The Acts are administered by the Pharmaceutical Society. The Poisons and Pharmacy Act, 1908, extended the schedule, restricted the sale of certain poisons to persons known to the seller, and required proper records and labelling of the goods sold. County and Borough Councils may license persons to sell arsenic or alkaloids of tobacco for agricultural or horticultural purposes.

The Dangerous Drugs Act, 1920, gave effect to the Hague Opium Convention of 1912 by allowing only under licence the import and export of raw opium (prepared opium prohibited), cocaine, morphine and other drugs likely to produce similar effects, and forbidding their use for any but medical and scientific purposes. The Secretary of State

administers the Act through the Customs and constabulary, and in 1921 and 1926 issued regulations, the last applying certain provisions of the Act to veronal and other drugs of the group.

An Amending Act in 1923 was passed in order to ease the administration for medical, veterinary and dental practitioners, further to hinder the traffic, and to increase the penalties up to £1,000 and penal servitude for ten years.

The Therapeutics Substances Act, 1925, provides for the regulation of the manufacture, sale and importation of vaccines, insulin and other biological remedies, and salvarsan, which cannot be tested by chemical means. Regulations have been made after consultation with an advisory committee, appointed in August 1926. Licences are given in England by the Minister of Health.

Light and Air

To prevent smoke is to promote economy, amenity and health. By present methods of conversion of coal into power or light 95 per cent. of its energy is wasted ; only one-half per cent. is used in its conversion into electric light ; whereas, if coal is carbonised at gasworks, 23 per cent. is secured in the gas, 60 per cent. in the coke, 6 per cent. in tar and sulphate of ammonia. As a result of smoke-deposit, Manchester spends an extra £300,000 a year on washing, or $7\frac{1}{2}d.$ a head more than Halifax ; the material damage in Manchester and Salford is reckoned annually at £1,000,000, or £1 a head. As to amenity, it is sufficient to note that the annual deposit varies from 40 tons to the square mile in Bermondsey to 7 in Malvern ; that the average

total for London was reduced from 55,000 tons in 1916 to 40,000 in 1920 ; that throughout the country 2,500,000 tons of soot escape every year from domestic fires and 500,000 tons from industrial works ; and, finally, that the country gets 20 per cent. more sunlight than the town. As to health, the experience of Alpine sanatoria has directed attention to the exceptional and direct value of sunlight. Its absence is a potent factor in rickets, and foggy, soot-laden atmospheres are particularly harmful to all cases of respiratory diseases. Under the Public Health Act of 1875, nuisances include a ' fireplace or furnace which does not, as far as is practicable, consume its smoke, and any chimney (not domestic) sending forth black smoke in such quantity as to be a nuisance '—a pretty instance, by the way, of defining a thing in terms of itself. It is the duty of the Sanitary Authority to inspect and ascertain nuisances ; to serve notice to abate, and, if necessary, to apply to a justice for an order or themselves to abate the nuisance and recover the cost. The Sanitary Authority may be moved by an aggrieved person or by two householders. These powers have proved insufficient. The Public Health (Smoke Abatement) Act, 1926, therefore, extended the law to cover any smoke or grit, increasing the penalties and enabling Sanitary Authorities to make by-laws, the Ministry to hold inquiries and County Councils to act in default. It exempts private residences, ships, and, for five years, steel works in Sheffield and certain other processes ; and it allows several excuses for inaction. It seems clear that the chief trouble—that of the domestic kitchen range—can only be solved by the adoption

of central heating more commonly, of gas or electricity for cooking generally and by the invention of a smokeless fuel, on which the Fuel Section of the Department of Scientific and Industrial Research is engaged. Thus we must hope that we may be left with the healthier and more cheerful open fireside in our sitting-rooms, and may, some day, in our city life regain the sunshine which in our ignorance we have lost;

CHAPTER VIII

MOTHER AND CHILD

THE considerations discussed in Chapter III., that make the numbers and quality of the population as a whole of first importance to the national welfare, apply with peculiar force to the safety of the mother in child-bearing and to the infant after it is born. Reason apart, there is no more urgent appeal to every human heart than that of the mother and her babe; and some 700,000 English mothers and their babes are concerned every year. The pertinent figures for England and Wales are as follows:

Maternal Mortality					Infant Mortality ¹	Birth-Rate (per 1,000 pop.)	Total Death-Rate
	No. of Deaths	Per 1,000 Births					
		Fevers	Other Causes	Total			
1900	4,455	2.18	2.63	4.81	154	28.7	18.2
1910	3,191	1.42	2.14	3.56	105	25.1	13.5
1920	3,942	1.87	2.25	4.12	80	25.5	12.4
1925	2,744	1.62	2.24	3.86	75	18.3	12.2

London bills of mortality suggest a maternal mortality in 1660-4 of 22 per 1,000 births, in 1700-4 of 15, in 1800-4 of 10. International comparisons

¹ Deaths of infants under one year of age to 1,000 births in same year.

for 1911-13 show higher maternal mortality for Scotland (5.7), Spain (5.3) and Switzerland (5.2) as compared with that for England and Wales (3.9); and lower for Germany (3.5), Norway (2.9), Italy (2.4), Sweden (2.4) and Holland (2.3).

As to infant mortality, analysis of the figures shows that in 1925, of the 75 infant deaths per 1,000 births, 32 occurred in the first month of life, as compared with 41 of the 128 in 1905. Most deaths of infants under one month are due to pre-natal causes, upon which preventive measures, so successful in the later months of the first year, have so far produced little effect. In 1925 the mortality of male legitimate and illegitimate infants was 81 and 145 respectively in 1,000 births, of female 63 and 125; the total infant mortality in the northern areas was 90, in Wales 82, in the Midlands 68, in the South 60; that of all County Boroughs was 87, of other urban districts 72, of London 68, and of rural districts 64. International comparisons for 1925, in contrast with 75 for England and Wales, show an infant mortality of 89 in Paris, 102 in Berlin, 158 in Warsaw, 274 in Madras and 356 in Bombay; and, again, of 72 in Chicago, 68 in Copenhagen, 43 in Stockholm and Oslo, and 36 in Amsterdam.

Childbirth is a normal, physiological process, as essential to the complete individual female life as to the community; but in the complex modern conditions it is especially liable to grievous accident, often due to well-intentioned interference, and often preventable by well-timed advice. An investigation of every maternal death connected with childbirth is urgently needed. Maternal mortality

is highest in sparsely populated rural and in certain industrial districts, notably those associated with the textile and mining industries. The declining birth-rate, giving a far larger proportion of first confinements, with their greater difficulties, is a slightly adverse factor. Insanitary conditions, although less adverse in their influence than might be supposed, have some injurious effect. As to the effects of employment of women on maternity, the War Cabinet Committee, reporting in 1919, came to no precise conclusions; for women's work in industry is usually of a light and sedentary kind, and, in the better factories except in textiles, potteries and laundries, they do not commonly continue work after marriage. But this throws them back all the more on the rougher, less skilled employment and on ill-paid home-work, which, combined with the care of family and household, reduce the strength and stamina required for a confinement.

The Washington Convention of 1919, not ratified by this country, would provide for the absence of a woman from work for six weeks before, and compulsorily for six weeks after, confinement, with full maintenance of herself and her child, free attendance by doctor or midwife, and, on return to work, an hour off working hours for nursing her infant. In this country the Factory and Workshops Act, 1901, Section 61 (to be re-introduced in the 1926 Bill), already provides that no woman shall return to work for four weeks after confinement.

But compulsion in this respect is not successful, and a better means of approach is through the Insurance Act. The Royal Commission on Health Insurance in 1926 accordingly recommended the

extension of maternity benefit to cover all fees (pre- and post-natal included) to doctors and midwives, with £1 cash benefit in addition, £2 where both parents are insured; maintenance, however, could not be limited to wage-earning mothers, and its extension to all mothers would cost from £6,000,000 to £8,000,000 a year. Indeed, the £5 given in Australia to every mother after childbirth, under a Maternity Bonuses Act, 1912, while welcome in relief of expenditure, has not improved medical attendance nor reduced maternal or infant mortality. In this country the present maternity benefit has doubtless been of value, but the essentials of prevention are good, available ante-natal supervision and professional attendance both by midwife and, when necessary, by doctor, during and after confinement.

One of the chief instruments for the reduction of these death-rates is the Midwives Acts, 1902 and 1918, to which must now be added the Midwives and Maternity Homes Act, 1926. These Acts set up a Central Midwives Board, the chief functions of which are to regulate the conduct and training of midwives, and to publish a roll of midwives, to which only the names of duly trained and certificated women are now added. The Acts also prohibit all but certified midwives from attending women in childbirth save under the direction and personal supervision of a medical practitioner or in cases of sudden and urgent necessity. Midwives are supervised locally by a woman inspector under the councils of counties,¹ and of county boroughs,

¹ Also by a few Sanitary Authorities to whom powers were delegated by a clause in the 1902 Act, since found unsatisfactory and repealed.

and grants are available for their training. Courses of training are now of six months' duration for trained nurses and twelve months for untrained women. There are some 60,000 midwives on this roll, but only 16,000 of them are in active practice. They attend over half the confinements in England and Wales, the proportion ranging from 43 per cent. in Leeds to 86 per cent. in Merthyr Tydvil; one-third of the rural parishes have no midwife available. Local authorities for maternity and child welfare work¹ have powers to subsidise midwives and so to enable even the poorest lying-in women to obtain their services. The trained midwife, in intimate relation with her clients, is able to help and to persuade them before, during and after confinement to help themselves, to their great advantage and that of their infants and families. It is hoped that the last Midwives Act, passed in 1926, will put an end to the practice of midwifery by 'handy-women,' and particularly to those cases where, although the patient has engaged a doctor, the handy-woman, acting nominally as nurse, conducts the confinement herself and does not summon the doctor until everything is over.

Maternity homes have now to be registered, and, unless specially exempted, to be inspected by County Councils and County Borough Councils, who will make by-laws with regard to records of patients, of infants and their disposal, of deaths and their causes.

The provision of maternity beds at present recognised by the Ministry consists of 2,014 beds

¹ Councils of counties; county boroughs and larger urban districts, under Maternity and Child Welfare Act, 1918.

(839 municipal) in 133 institutions (66 municipal, others voluntary), whether in maternity homes and hospitals or in general and cottage hospitals. The need of such provision is great and growing, both for abnormal and for normal confinements, in view of the risks and difficulties of childbirth in the overcrowded or isolated conditions of life of many prospective mothers in the present day. In forty-two districts 'home helps' are provided by Local Authorities, to undertake domestic work during the mother's confinement; but such service is difficult to provide economically and to maintain.

A second important measure for reduction of maternal and infant mortality lies in the prompt notification of all births to the Medical Officer of Health. The Notification of Births Act, introduced by Lord Cecil in 1907, was adoptive; but since 1915 (in addition to the duty of registering a birth within forty-two days) it has been incumbent both on the father and on midwife or doctor to notify within thirty-six hours to the Medical Officer of Health the birth of any child, born dead or alive, after the twenty-eighth week of pregnancy, thereby enabling him to send a health visitor to visit, help and advise as to the welfare of mother and child. Arrangements soon sprang up in all parts of the country to make use of these opportunities of giving help and advice, which were warmly welcomed by the mothers; and it was quickly recognised that children up to school age (roughly, five)—now known as 'toddlers'—must be included.

The movement begun by Professor Budin's Infant Consultations in Paris in 1892 was given statutory

authority in this country in 1915,¹ and was helped forward by grants from the Local Government Board—a notable instance of benevolent bureaucracy, for which Parliamentary sanction was indirect and obscure but public approval clear. The chief agencies in this movement other than the doctors, for whose better training in obstetrics and child-welfare the General Medical Council has since provided, and the midwives, maternity nurses, and home helps, are the ante-natal centres, infant-welfare centres, health visitors and day nurseries.

In 1925 the ante-natal centres in England numbered 675 (418 under municipal and 257 under voluntary agencies) ; in these advice is given, usually weekly, as to the health of expectant mothers in respect of their pregnancy, with a nurse midwife under a doctor in charge, the latter often a woman on the Medical Officer of Health's staff, sometimes a local practitioner, sometimes a consultant who visits only occasionally. Dinners and milk may also be provided free or at half cost, and are of great value.

In 1925 there were 2,195 infant welfare centres in England (561 under County Councils, 861 under Sanitary Authorities, 773 under voluntary agencies) for advice as to health of infants and toddlers. Treatment is not considered part of the normal function of the ordinary centre, but, in areas where facilities for treatment are lacking, some treatment for ordinary ailments may be provided at the centre. Milk is frequently granted to necessitous cases for,

¹ By the Notification of Births Extension Act, administered by 144 County and County Borough Councils and by 300 Sanitary Authorities.

or at less than, cost price, and such preparations as malt extract and cod liver oil are often obtainable at reduced rates. In 308 areas, mostly in the counties, one set of premises serves both as an ante-natal clinic and as an infant welfare centre. These centres are extremely popular, and the number of attendances, increasing in all districts to as many as 100 mothers with children, interferes with their efficiency. In view of their great value, new centres will be constantly required.

There are now 3,878 women engaged whole or part time in health visiting. Health visitors supplement the work of the centres, and apply the same principles to the actual home life of the mothers. They are especially valuable in rural areas and for mothers unable to leave their homes ; but they are essential, in any case, to the efficiency of all Centres. As already noted,¹ in 1928 a more severe course of training is to be demanded of all women appointed for the first time as whole-time health-visitors, and, if satisfactory terms of service can be given, health visiting should form a new and attractive profession for young women, of the greatest interest to themselves and value to the community ; while the district nurse, who is able to assume this function in addition to her multifarious other duties, acquires a new importance in every village and parish.

One hundred and five day nurseries are recognised by the Ministry for grant, 85 under voluntary auspices, with accommodation for 3,454 children whose mothers are obliged to go out to work. There are also 6 resident nurseries and 31 homes for 871 children ; 103 homes for 1,442 unmarried mothers

¹ See p. 41.

and 1,312 babes, as well as babies' hospitals and observation wards, mostly under voluntary agencies, although Local Authorities may also provide any such institutions.

Under Regulations issued in 1926, providing for the better notification of puerperal fever and of ophthalmia neonatorum (inflammation of the eyes in the new-born), the Minister aims at a reduction of the 1,110 tragic and preventable deaths in 1925 from the first cause and of the 5,748 cases of the second preventable accident, with its inevitable result for many children of blindness for life. Grants for these several purposes in England amounted in 1924-5 to £772,684, £592,594 being paid to Local Authorities and £180,090 to voluntary societies. The need now is not so much for further powers and grants as for a fuller use and co-ordination of those now made available. These services are a conspicuous example of the true method of public health work, which achieves its ends by inculcating the essentials of home life and by educating and inspiring the public to help themselves.

CHAPTER IX

EDUCATION

THE Conservative and Unionist Party have the credit for passing some of the chief educational measures into law, such as those for compulsory education from the ages of five to fourteen in 1876 ; free education in 1887 ; special education up to sixteen of defective and epileptic children in 1899 ; the creation of local education authorities and the State system of secondary schools in 1902 ; and, as dominant in the coalition, the reforms of 1918. This record must be implemented by a policy of continuous progress on sound lines, and not least in respect of health. In this phase of education, Acts were passed for the education of blind and deaf children in 1893 and for provision of meals in school in 1906 ; but it was not till 1907, and then by a private amendment (prepared by the National League for Physical Education and Improvement and proposed in the Lords by Bishop Boyd-Carpenter), that the duty of medical inspection of children was imposed on Local Education Authorities, with the power to attend to their health and physical condition. The school medical officer was first recognised in the code of 1908.

The importance of such a measure to the health of the nation is obvious. Its objects are to find out and correct defects at an early stage ; by proper habits, care and cleanliness, to prevent them ; to strengthen stamina ; to distinguish individual

aptitudes ; by instruction of teachers, parents and children to prevent future ill-health and inefficiency ; and by such education of the rising generation to ensure the intelligent health of the nation in future.

The School Medical Service is one of vital concern both to the Ministry of Health and to the Board of Education. Parliament accordingly decided in 1919 that primary responsibility for the service should be assigned to the Minister of Health ; and this transfer was accordingly made in accordance with the proviso, in Section 3—(1) (d) of the Ministry of Health Act, 1919. But Parliament also recognised that, as a practical matter, the organisation and detailed working of the School Medical Service concerned the Local Education Authorities and the Board of Education rather than the Minister of Health ; and the Board therefore continues to deal with proposals about the service received from Local Education Authorities and the payment of grants in respect of school medical work. The present Chief Medical Officer of the Ministry of Health is also Chief Medical Officer of the Board of Education. This liaison is an example of the relations required between the Ministry of Health and other Government departments exercising functions related to the public health. Such relations should be maintained and strengthened.

The total estimates of the Board on the school medical service, mainly in grants to local Educational Authorities, for the year 1926-7, is £1,463,000 out of £44,300,000, a proportion—3 per cent.—obviously justifying expansion when further resources become available. The 318 Local Education Authorities are the County and County Borough

Councils and the Councils of certain other boroughs and urban districts with a minimum population of 10,000, acting through their Education Committees, which include co-opted members. In most cases the Medical Officer of Health is appointed School Medical Officer. In 1924 they were assisted by 775 medical officers, 311 dentists, 752 oculists and other specialists, and by 4,368 school nurses.

The first object is, by systematic *inspection* of all children on entering school-life, between ages eight and nine, and at twelve years, to ascertain and record physical and mental defects. Of over 5,000,000 children in average attendance in England and Wales in 1924, routine medical inspections were made of nearly 1,700,000, of whom 17 per cent. in London, and 20 per cent. elsewhere—that is, over 337,000 children—were in need of treatment. Special cases numbering 722,744 were also examined, making the total examined 2,420,305—nearly half the number in attendance. Representative returns for 1924 show the following incidence of defects requiring treatment per 1,000 children inspected: vision, 62; nose and throat, 51; skin, 13; lungs, non-tuberculous, 12; squint, 9; eye (disease), 9; anæmia, 9; deformities, 7; hearing, 6; malnutrition, 6. Of the 1,766,325 inspected by dentists, mostly at ages of from five to seven, 670 per thousand required immediate treatment.

Treatment

Parents frequently attend these inspections, and can then be instructed as to the treatment and prevention of defects. The contact thus established between doctors, teachers and parents

is of great value. But in general it is essential to follow up the results to the children's homes. In this work the school nurses, school attendance officers and voluntary care committees—offering most useful work to persons of goodwill—play an essential part. Parents are expected to obtain the necessary treatment for their children or to contribute what they can afford towards the cost of any treatment provided by the Local Educational Authority. Every use is made of welfare associations, hospitals and special institutions; and since 1918 the treatment of defects in elementary school-children must be provided, if not otherwise, by the Local Education Authorities. For minor ailments, defects of teeth and vision, enlarged tonsils and adenoids, and ringworm, there are established, by 309 Local Education Authorities, 1,150 school clinics. In 1924, 911,607 cases of minor ailments or defects of eye, nose or throat were thus treated—all but 95,000 under the Local Education Authorities' schemes—as well as dental defects in 834,932 children. After repeated warnings, prosecutions may be taken against negligent parents.

The usual method of dealing with outbreaks of infectious disease in schools is by exclusion of infected children and of immediate contacts; under proper supervision and following-up it is seldom necessary to close a school. In 1924, 1,500 cases of smallpox occurred in children of school age, only two of whom appeared, and two others were stated, to have been previously and successfully vaccinated.

The numbers of 'defective' children in 1924 were: blind, totally 2,048, partially 4,156; deaf, totally 4,173, partially 1,781; mental, not notifiable,

30,821; epileptic, 2,444; tuberculous, (a) pulmonary, infectious, 4,237, non-infectious, 15,502, (b) non-pulmonary, 7,903; delicate, 61,798; crippled, 35,304; total, 170,167. Of these, 46,232 attended certified special schools, 96,813 public elementary schools, 22,533 no school or institution. Further provision is urgently required, especially for mentally defective children. Particularly hopeful developments are those of orthopædic treatment, whereby the cripple may become but a painful memory of the past, and of open-air schools for delicate or invalid children.

Body-building, however, the positive side of health education, is of greater eventual importance even than the treatment of defects. The following subjects must be considered.

School Buildings

Most of the older school buildings are defective in the essentials of ventilation, lighting, heating, water-supply, cloak-rooms, arrangements for the drying of clothes and sanitation. A complete survey is now being conducted, and in 1924 letters were written by the Board to 165 Local Education Authorities with a view to the improvement of 807 of the worst schools or departments. The planning of new schools, however, and their surroundings, especially with a view to open-air use, shows great variety and improvement.

Physical Education

This, based on the *Syllabus of Physical Exercises*, 1909, makes good progress. It has led to the introduction of organised games, swimming, folk- and country-dancing, school camps and evening and holiday play-centres.

Feeding

Under the Education (Provision of Meals) Act, 1906, and Education Act, 1921, 138 Local Education Authorities in the year 1923-4 provided 103,231 children with over 10,000,000 meals, at an average cost of under 4*d.* per meal, and at a total cost of £173,621, towards which parents paid £16,557 and other sources £5,351. Sincerely managed, this provision is of value both to the health of the children and to the efficiency of the education.

The Teacher

But it is on the teacher that health progress must depend. In the training-colleges, health is taught as a 'subject' under a special syllabus. It requires, far more, to be incorporated into the whole spirit of their training; and only gradually will the teachers think out the consequences of the extension of education to the body. The teaching of the simple rules of health and their reasons is naturally based on the personal hygiene and cleanliness of the children themselves; it is fostered by the inculcation, especially, of healthy habits, moderation and self-restraint; by spontaneous rivalry and by the encouragement of athletics, and of such useful open-air pursuits as gardening. The home influence is, however, the determining factor, and requires to be urged in the visits of parents to schools, of nurses and others to the homes; by clergy and managers; in the instruction given in maternity and welfare clinics; in health publicity in whatever guise.

Higher Education

So far, this chapter has dealt with the elementary schools. Under the Education Act, 1921, similar

duties and powers as to medical inspection are given to Local Education Authorities in respect of certain secondary schools and institutions. Grants are payable to the Local Education Authority at one-half of its net expenditure. Parents are advised of defects and obtain private medical advice. In 1924, of the 147 Local Education Authorities concerned, 128 exercised their powers, 132,000 pupils being examined in 1,000 such institutions. The results in 23 representative areas showed that 13 per cent. of the pupils, as compared with 20 per cent. in the elementary schools, needed medical treatment. The defects showing a notably higher ratio per 1,000 than in the elementary schools were defective vision, 79:62, and deformities, 32:7; a notably lower ratio, nose and throat, 25:43; ear disease, 4:11; and lung disease, 4:12. But in positive health education little has yet been done.

Commercial firms, on the other hand, are realising to an increasing extent the value of healthy workers and the importance of good working conditions. An increasing number study the bodily welfare and psychology of their workers, and are teaching hygiene in their continuation schools.

Pre-school Health and Public Opinion

Common sense suggests the treatment of defects in children or 'toddlers' before reaching school age. The work of the maternity and child welfare clinics, both in infancy and 'toddlers,' under the Ministry of Health, is therefore germane to that of the schools; so, too, is that of the 27 nursery schools, mostly in London, Bradford and Birmingham. In this interrelation of activities, the unification of Local Government and the principle of block-grants,

to be used at the discretion of the Local Authority instead of on fixed lines, will be all to the good.

But the education of the public opinion behind the local authorities is essential ; and to this end power is given to Local Sanitary Authorities and to County Councils, under the Public Health Act, 1925, to undertake health propaganda. Investigation and reports are doubled in value when made available and brought home to the public. There is as yet not nearly enough attractive publicity about Local Government. General propaganda is mainly undertaken by voluntary societies, whether directly or indirectly concerned with health ; by women's, boys' and girls' welfare organisations ; in congresses and conferences, local, national and international ; in lectures and classes, films and broadcasting, committees and practical work, sometimes supported by Local Authorities and Treasury grants, frequently organised and conducted by doctors, nurses and other officials in their leisure hours. Interest is often with advantage concentrated on special subjects, such as housing, maternity and infancy, alcoholism and athletics, tubercle or venereal disease ; or on an annual health-week or baby-week, when all local activities—otherwise dissipated in isolated effort—can be focussed on the subject of health, and when public interest—jaded by constant repetitions—can be more effectively aroused, with the friendly and invaluable help of the Press. It is in such ways, *pari passu* with their translation into official schemes, that pioneer work has always been carried out, and that constant progress will in future be made in curing the curable, preventing ills that are preventable, and building up a sane, efficient and contented people.

CHAPTER X

POOR LAW AND HOSPITALS

THE first and instinctive demand of the individual or community in matters of health will always be for personal treatment of actual disease or injury.

Poor Law

The main provision of personal treatment by the community is that of the Poor Law, dominated by the principle, since 1601, of relief being intended only for those unable to work or to sell their labour, but complicated by the necessity of relieving all in need, even if able but unwilling to work. Hence came the deterrent aspect of the Poor Law ; hence the mixing of old and young, sick, feeble-minded and simple, with the dregs of mankind ; hence the shame and stigma of pauperism and the hatred of the workhouse. Founded on the humane object of relieving destitution, the Poor Law is essentially prevented from dealing with the mass of the people who are not destitute ; is bound to deal with effects rather than with causes ; is necessarily partial ; and cannot, therefore, prevent. It is as if the commander of an army in the field dealt only with his casualties without power to avoid them.

The Poor Law is administered by Boards of Guardians, elected for the 635 unions of parishes in England and Wales, which were constituted by the

main Poor Law (Amendment) Act of 1834. They have a wide discretion in administering the Poor Law under the Ministry of Health, which is kept informed by returns from clerks to Guardians, and, by visits of its small inspectoral staff, checks finance through district auditors and sanctions loans.

Medical relief, in respect of which complete statistics as to cost are not available, is provided for the poor, either in their own homes or in institutions. The former is given only on orders granted by relieving officers, usually on the recommendation of district medical officers, who number 3,500, are employed each for a district area, limited as a rule to 15,000 acres and 15,000 population, and are paid, in most cases, only a very small fixed salary, which often has to include the cost of the provision of drugs. In London and some large towns the sick in general are seen at fixed hours at Poor Law dispensaries. The patients are ordinarily the aged, confinement cases, children, and adults mostly in the more advanced stages of disease; but in some unions medical relief is given even to able-bodied men in full work. The district medical officer can seldom prescribe medical extras, never district nursing, although some Boards subscribe to local nursing associations; he makes no returns; has rarely a superior officer to advise and encourage him; has no relationship with the Medical Officer of Health and no incentive to advise, to prevent illness or to report unhealthy conditions. His business is 'to supply medical relief,' too often limited to the giving of a bottle of medicine.

Formerly no sick were admitted to workhouses; but, since the establishment of the Local Government

Board in 1871, Guardians have been pressed to provide buildings, equipment and staff on an ever-increasing scale. Apart from mental hospitals (see Chapter XIV.), there are now¹ 69 separate infirmaries, accommodating 37,077 sick, and 624 institutions under the Poor Law Institutions Order, 1913, containing 79,022 sick-beds and 113,785 others. Of these 624 institutions, 66 have over 500 beds apiece, 100 more have over 200, several have less than 20. Two-thirds of the sick are in general mixed workhouses. In addition, there are 363 separate establishments for 39,479 children, including provision for the sick.

The rural workhouses are usually clean and sanitary, and the inmates neither overcrowded nor neglected ; but the buildings are often unsatisfactory, patients unsuitably mixed, and nursing inadequate, while the visiting medical officer, underpaid and required to provide the drugs he prescribes, pays only fleeting visits. The mixed workhouses in the towns are better, but are still for the most part medically under-staffed and under-nursed.

The separate infirmaries, on the other hand, are increasingly used by the non-destitute poor, who contribute towards the cost. The nursing is much improved, 90 infirmaries being approved for training by the General Nursing Council. But the staffing and specialisation are necessarily inferior to those of the large voluntary hospitals ; medical students are not ordinarily admitted ; there are, as a rule, no medical supervision or criticism, no mutual arrangements between the infirmaries, no co-operation with the district medical officers, no

¹ Return 1st January, 1925.

research, no early cases, no following-up. It has long been evident that the great resources of the Poor Law system can be turned to far better account. The whole question was thrashed out by the Royal Commission of 1905, whose report, with thirty-four appendix-volumes, was issued in 1909. The majority report proposed the replacement of the Guardians by statutory committees of County and County Borough Councils as Public Assistance Authorities, with suitable redistribution of certain functions amongst the several Local Authorities and departments of Government. Four out of the 17 Commissioners, in a minority report, recommended 'the break-up of the Poor Law' and the redistribution of all its functions among the existing committees of County and County Borough Councils, co-ordinated by 'registrars of public assistance' under the county authority. The waste, confusion and overlapping of the many different forms of public assistance were well brought out in 1924 by the invaluable report¹ of an Inter-Departmental Committee on Public Assistance Administration, and now there seems general agreement in favour of a full measure of reform. The present Minister of Health accordingly issued in December 1925 his provisional proposals for Poor Law reform by transference of powers to the County and County Borough Councils, enlarged or assisted as may be required, in order to secure co-ordination and improvement in the provision for the prevention and treatment of ill-health; co-ordination of public assistance, to include unemployment benefit; decentralisation from Whitehall and concentration

¹ Cmd. 2011.

in the counties and county boroughs of responsibility and financial control.

As a prelude, a Poor Law Bill, to consolidate the 95 Acts concerned since 1601, was passed into law in July 1927.

It would be difficult to exaggerate the importance alike to individual, local and national welfare of securing these essential objects of progress, generally admitted and long overdue.

Voluntary Hospitals

The voluntary system of hospital provision existing to-day may be said to date from the eighteenth century. At that date the hospitals were intended to provide treatment for cases of illness generally. But the development of the public health and the Poor Law medical services has relieved the voluntary hospitals of their responsibility for certain types of disease. As a rule they no longer admit cases of a chronic type or of infectious or mental disease. In addition, however, to treatment, they are essential to the training and education of medical practitioners, both before and after graduation, and many are important centres of research, to which fact much of the phenomenal progress in the last two centuries may be attributed.

The war severely taxed the resources of the voluntary system; hospitals then had little or no opportunity of opening up new sources of revenue to meet the very considerable increase in costs. As a result, at the conclusion of the war the annual income in the majority of cases was wholly inadequate to meet the expenditure. The financial

position of the system became so serious in 1920 that the Minister of Health appointed a strong committee, under the chairmanship of Lord Cave, the present Lord Chancellor, to consider the financial position of the hospitals and what action should be taken to assist them. The committee found that the hospitals were taking active measures to open up new sources of income, and in due course should again attain a stable financial position. They recommended that education funds should be available for the training of nurses ; that public authorities should pay for the treatment of their employees ; that gifts should be free of taxation ; but that the voluntary system, with its greater efficiency and economy, its gratuitous services, especially in the training of doctors and nurses, and the sympathy it evokes from the public, was well worth saving. To meet the immediate needs of the hospitals, the committee recommended that temporary financial assistance should be given from the Exchequer, and a sum of £500,000 was accordingly voted by Parliament. The administration of the grant was entrusted to a Voluntary Hospitals Commission, which established, in most of the counties and in some of the larger county boroughs, Local Voluntary Hospital Committees, to assist them in their work. Since their establishment these committees have proved of great value.

By the time the distribution of the Government grant was completed in 1924, it was clear that there need no longer be any anxiety as to the ability of the voluntary system to maintain itself. But there were still no surplus funds available for extensions, which in many areas were long overdue

and were urgently needed. In a report¹ published in July 1925 the Commission estimated that an additional 10,000 beds were needed, at a cost of £400 each, and they recommended that the State should contribute towards the cost of providing these beds. No such contribution has yet been promised.

The present accommodation and financial position of the hospitals in England and Wales is shown in the following table :

<i>Hospitals</i>	<i>Beds</i>		<i>Income</i> 1925	<i>Surplus (+) or</i> <i>Deficiency (-)</i>	
	<i>Total</i>	<i>Per 1,000</i> <i>pop.</i>		1920	1925
London .. 130	13,757	3.07	£ 3,029,000	£ -381,000	£ +123,000
Provinces .. 674	36,703	1.10	4,800,842	-462,956	+127,365
<i>Total</i> England and Wales .. 804	50,460	1.33	£7,829,842	-£843,956	+£250,365

Free legacies are not included in the figures of income for the provinces.

The amount of work done is suggested by the Red Cross Report for 1925, showing that in 652 of the hospitals outside London, treatment was given to 528,349 new in-patients and 2,223,822 out-patients in the year. The cost of treatment is given in the report of Lord Cave's committee as £167 per annum for each occupied bed in 1920 and 1s. 5d. for each out-patient attendance.

With these 50,000 beds and 120,000 under the Poor Law, with 39,000 provided by Local Authorities for fevers and smallpox, 11,500 for tubercle, 126,500

¹ Cmd. 2486.

for mental cases and 8,000 for the Services, we have a total in-patient provision in England and Wales of 355,000, or nine beds per 1,000 population. In the United States it is reported¹ that beds increased from 35,473 in 1873 to 770,375 (7.3 per 1,000) in 1923 in 6,762 hospitals, in a population three times that of England and Wales, at a cost of £200,000,000 a year; that the building programme entails the expenditure of £50,000,000 in five years; and that there are also 4,000 dispensaries treating 7,000,000 to 8,000,000 persons, making 30,000,000 attendances a year.

Co-ordination

It is noteworthy that the Socialist Party, in their policy with regard to hospitals published in 1923, would retain the voluntary hospitals for the present, while organising them into one complete hospital system with the infirmaries, sanatoria, dispensaries and all other public institutions for the sick, with receiving stations in outlying districts under the local health authorities.²

The need of a properly thought out scheme was met on even larger lines in an interim report to the Minister of Health in 1920 by the Consultative Council on Medical and Allied Services under Lord Dawson of Penn.³ This scheme, intended only as a scheme, proposed a complete domiciliary service, both preventive and curative, of doctors and nurses, dentists and pharmacists, midwives and

¹ *Hospital Finance*, by A. F. Shepherd.

² *The Labour Movement and the Hospital Crisis*.

³ Cmd. 693.

health visitors, centring round 'primary health-centres' in the small towns and villages, which in turn would be supplemented by the town hospitals and infirmaries, suitably adapted as 'secondary health-centres,' all based on the teaching hospitals in the university towns as the third line or ultimate centres of each region. There is, in fact, a clear and pressing need, not only for further building equipment and facilities, but, to use a military term, of staff work to weld the several units, however provided, into one comprehensive machine to meet every reasonable call for hospital treatment. It is the Voluntary Hospitals Commission and the health authorities that must devise the next step. The transfer of the Poor Law institutions to the county authorities is an indispensable preliminary.

Municipal

Finally, a note must be made of municipal hospitals and clinics. Sections 131-3 of the Public Health Act, 1875, enable Local Authorities to build hospitals for the sick; or to contract for the use of any part of, or to pay for the reception of sick in, a hospital; prescribe the repayment of cost of maintenance by non-pauper patients, and enable the authorities to provide a temporary supply of medicine and medical assistance to poorer inhabitants. Under Section 64 of the Public Health Act, 1925, Local Authorities may make subscriptions or donations to voluntary hospitals or institutions, provided that such expenditure does not exceed in any one year the product of a penny rate. Only a few Local Authorities have taken advantage of

these powers. Just after the war, however, Bradford took over the local infirmary, well equipped as a military hospital. To this institution, containing some 800 beds, are admitted Poor Law patients on the order of the relieving officer, patients from the various municipal clinics in the town, and private patients at the request of their own medical attendants. The experiment appears to be working satisfactorily; but the difficulty of co-operation between a rate-supported institution and private medical practice is obvious, and proved insuperable in the semi-industrial suburb of Willesden, where a scheme initiated in 1918 under the District Council was abandoned after five years. Such proposals, however, prove the needs and the obstacles to progress in the present chaotic condition of medical services, and point the way usefully to developments, whereby Health Insurance, the War Pensions service, and Poor Law medicine may be welded into one effective system in co-operation with the voluntary hospitals and private medical practice, in proper relation to the general organisation of public health throughout the country. Meanwhile the 'Service' and War Pensions hospitals, the municipal institutions for 'fevers,' tuberculosis, maternity, venereal disease, lunacy and mental deficiency, with the dispensaries and clinics for minor ailments under health and education authorities, are recognised for the most part as efficient instances of State or municipal management. They are dealt with separately in Chapters VIII., IX., XII., XIII. and XIV.

CHAPTER XI

INSURANCE

Introduction

An analysis of problems under the Poor Law shows that much poverty is due to disability and sickness. To the late Mr. Joseph Chamberlain is due the chief credit of bringing proposals into practical politics for Old Age Pensions and for Workmen's Compensation in the case of accident. While Secretary of State for the Colonies he secured the passing of the Workmen's Compensation Act, 1897, which was taken as a model for similar legislation in most of the Dominions, and led to commercial schemes of insurance against the risk. In 1906, compensation was extended to almost every industry and to certain industrial diseases, giving up to half wages, not exceeding 20s. a week and benefits, and, to dependents, in case of fatal accidents, up to £300.

Old Age Pensions

Proposals for Old Age Pensions at the sole expense of the State, adopted in the Unionist programme of 1895 by the influence of Mr. Chamberlain, became law in 1908, providing 5s. a week for every British subject in the kingdom over 70, with deductions in the case of private incomes of over 10s. a week. Amending Acts in 1911, 1920 and (consolidating)

1924 raised pensions to 10s. a week, and the limit of private means allowed with full pensions to 15s. But thrifty persons who had saved above that limit were penalised ; and the profligate proposal of universal pensions was urged in powerful quarters.

The problem was resolved by Mr. Neville Chamberlain's Widows, Orphans, and Old Age Contributory Pensions Act, 1925, which applies to the 15,000,000 persons included in the scheme of national health insurance on the following lines :

(i.) From July 1926 conditions as to means, residence and nationality are removed from the free pensions at the age of 70 in the case of persons insured under the Health Insurance Act since 1925 and their wives ;

(ii.) From January 1926 pensions are payable to widows and children of insured men at 10s. a week for the widow ; 5s. for the eldest child under 14, or, while in full-time instruction, under 16 ; 3s. for the younger children.

In the case of a widow of a man who died before 4th January, 1926, the widow's pension is payable only if there is a child under the age of 14 and until six months after the youngest child reaches 14 ;

(iii.) From January 1926 pensions of 7s. 6d. for each orphan of insured widower or widow, if under 14, or, while in full-time instruction, under 16 ;

(iv.) From January 1928 pensions of 10s. to insured man or woman at 65 ;

(v.) From January, 1926, weekly contributions up to the age of 65 of $4\frac{1}{2}d.$ by a man, $4\frac{1}{2}d.$ by his employer ; $2d.$ by a woman, $2\frac{1}{2}d.$ by her employer ;

(vi.) Under the National Health Insurance Acts, contributions are reduced by $\frac{1}{2}d.$ from a man and

$\frac{1}{2}d.$ from his employer ; by nothing from a woman, but by $\frac{1}{2}d.$ from her employer ; contributions from employees and all their medical benefits ending at 65 ;

(vii.) The administration is central ; claims are made to the Minister of Health, and payments are made weekly in advance by the Post Office ;

(viii.) The cost to the Treasury was to be £4,000,000 a year, to be revised after ten years.

Unemployment Insurance

Further relief to the Poor Law is provided by Unemployment Insurance, administered by the Minister of Labour. It was heralded by Distress Committees under the Unemployed Workmen Act, 1905, and by Employment Exchanges under the Labour Exchanges Act, 1909. It was introduced by Part II. of the National Insurance Act, 1911, followed by amending Acts in 1916, 1920 and 1921. In scope the scheme includes 12,000,000 workers, being those included in the Health Insurance scheme, chiefly excepting outworkers, agricultural workers and domestic servants.

The weekly contributions for a man over 18 are 7d. a week, with 8d. from his employer and 6d. from the State ; for a woman 6d., 7d. and 4½d. respectively, giving sufficient to pay benefits for a live register of 1,030,000 unemployed. The benefits are 18s. a week for a man, 15s. for a woman, 5s. for a wife or invalid dependent husband, and 2s. for each child. These continue for 26 weeks in one year. To meet exceptional unemployment, 'uncovenanted' benefit has been given during

four 'Special Periods,' 1921-3, and 'Benefit Years' since then. Thus by a State contribution, reduced by the Economy Act to £12,288,000 in 1926, but totalling £247,000,000 in the seven years since the war, an instrument has been devised by which the local rates are relieved and material assistance is given—normally not as a 'dole,' but as a right to which they have contributed—to countless victims of the fluctuations of trade. As Mr. Joseph Chamberlain wrote in 1886, 'It is not desirable that the working classes should be familiarised with Poor Law relief; it is an honourable sentiment which now leads them to avoid it.'

Legislation is now urgently required, as proposed in the unanimous report in 1927 of Lord Blanesburgh's Committee, to avoid abuse and put the scheme on a permanent footing.

National Health Insurance

A scheme was instituted by the Act of 1911 'to provide for insurance against loss of health and for the prevention and cure of sickness and for purposes incidental thereto.' Several amending Acts were passed, leading to the Consolidating Act of 1924. The following are the main points of the present scheme.

It applies to all British or alien persons between the ages of 16 and 70, employed in this country under contract of service in manual labour, and all in non-manual labour up to £250 a year, less some 32,000 'exempt persons' with other provision, and those in 'excepted employment' entitled to equivalent benefits. Seamen on British ships are included. From 1918 to 1925 those only who had

had at least two years of compulsory insurance have been admitted as 'Voluntary Contributors.' With the coming into operation of the Widows, etc., Pensions Act, 1925, special facilities for voluntary insurance were given to those who had previously been in compulsory insurance or 'excepted employment,' or had (in the case of men) been 'exempt persons,' or had served in the Forces during the Great War. The number of insured persons in 1925 was 9,157,000 men and 4,416,000 women, or 13,573,000 in all.

From January 1927 the following weekly contributions are payable: Man $4\frac{1}{2}d.$ (woman $4d.$), employer $4\frac{1}{2}d.$; voluntary contributor $9d.$ (woman $8\frac{1}{2}d.$). For low wage-earners the employer pays a larger share, or all. In the mercantile marine, the employer pays only $2d.$ Sailors, soldiers and airmen pay nothing, the State paying $3d.$ Thus, for Health and Pensions together, the employer pays $9d.$ or $7d.$, according to sex; a man pays $9d.$, a woman $6d.$ The State pays cost of central departments, and—by the Economy Act, 1926—one-seventh of the benefits and administration for men, one-fifth for women (formerly two-ninths in either case).

The following normal benefits are available in cash: (a) Sickness, after the third day, for 26 weeks, up to the age of 65 (or 70 till January 1928), if insured for 26 weeks and if 26 weekly contributions have been paid, 9s. for men, 7s. 6d. women; if insured for 104 weeks, and if 104 weekly contributions have been paid, 15s. for men, 12s. women.

(b) Disablement, after 26 weeks' sickness, if insured for 104 weeks and if 104 contributions have been paid, 7s. 6d.

(c) Maternity for uninsured wife of man who has paid insurance contributions for 42 weeks, or to an unmarried woman if similarly qualified, £2 (517,500 cases a year); for an insured wife, whether her husband is insured or not, after 42 weeks of contributions, normally £4 (200,000 cases a year).

These benefits may be reduced or suspended if the worker's contributions are in arrears. Sickness or disablement benefit is not payable for incapacity arising from accident in respect of which the insured person is receiving compensation, or damages of at least equal value.

Medical benefits are also available in kind, except in Ireland. They are operative immediately on a man becoming insured, and continue till death—such medical treatment and attendance as may reasonably be expected of general practitioners as a class, with proper and sufficient drugs and prescribed medical appliances, and such medical certificates as the scheme may require.¹

Additional benefits are given by an Approved Society, as it may choose, subject to the sanction of the Minister, on a disposable surplus in its funds being shown at the quinquennial valuation. Eight million pounds were so disposable after the first valuation in 1918; and of this £5,715,000 was allocated to cash increases.

As a result of the second valuation, in 1923, the

¹ Sanatorium benefit was withdrawn by the Insurance Act of 1920 in view of the provision for tuberculosis, available for the whole population, being made by the County and County Borough Councils. In nine years, £5,393,000 had been spent from insurance funds, £698,000 from war pensions funds, £336,000 from the Exchequer. Sanatorium treatment had been given to 250,000 persons.

surplus disposable was nearly £25,000,000 ; and of this amount roughly one-half has been allocated to cash benefits. The remainder, to be spread over five years, has been allotted as follows :

Dental, £8,585,220 ; ophthalmic, £1,374,800 ; hospitals, £987,510 ; convalescent homes, £716,280 ; surgical appliances, £414,830 ; relief of want or distress, £161,030 ; nursing, £73,390 ; provision of premises for convalescent homes, £47,440 ; allowances during convalescence, £11,730 ; allowances during infection £3,880. Total, £12,376,110.

The extent and proportions of the Health Insurance scheme may be measured by the following main figures in £ millions for 1925 :

Receipts: contributions, £24.8 ; interest, £5 ; Parliamentary grants, £8.1. Total, £37.9 millions.

Expenditure: benefits—medical, £8.5, sickness, £9.3, disablement, £4.5, maternity, £1.5, other £.8 ; administration—by Approved Societies, £3.1, by Insurance Committees, £.4, central £.9. Total, £29 millions.

Accumulated funds at end of 1925 : Invested with National Debt Commissioners, £66.4, by or for Approved Societies, £44.5 ; cash—at Bank of England, £.2, with societies and committees, £1.9. Total, £113 millions.

Insurance

Insurance normally extends for a free year (periods of illness excluded) beyond the date when insurable employment ceases, or beyond a voluntary contributor's last payment. Medical benefit continues for a few months beyond the year. Sickness

and disablement benefits cease at the age of 65 (70 till January 1928).

Every insured person has a card lasting for six months ; every time he receives wages, the employer stamps his card for their joint contribution. The money thus received by the Post Office for purchase of stamps is paid into the National Health Insurance Fund. The fund is a clearing-house or bank, with separate accounts for each Approved Society, for the Deposit Contributors, for the Exempt Persons Fund and for the Navy, Army and Air Force Insurance Fund, from which moneys are drawn for benefits and administration. The accounts are balanced yearly ; the Approved Society invests half the balance and the remainder is invested with the National Debt Commissioners. The accounts of societies are audited annually by the Government auditor. The first quinquennial valuation showed deficiencies in only 407 of the 9,755 societies and branches in the United Kingdom, and a net surplus of £17,192,968, of which £9,184,087 was certified as disposable for additional benefits. The surplus to the end of 1925 is estimated at £65,000,000, of which £30,000,000 will have been allotted to additional benefits between 1926 and 1931. If the Contingency Fund, compulsory on every society, is insufficient to meet the deficiency in a society or branch, the Central Fund (constituted by compulsory appropriations from all Approved Societies) may meet it, if due to special causes beyond the society or branch's control.

The Navy, Army and Air Force Insurance Fund is similar to an Approved Society, and is managed by the Minister of Health, with an Advisory

Committee. The 140,000 men who do not belong to an Approved Society contribute nothing, and only receive maternity benefit for their wives, the State contributing 3*d*. On discharge from the Service, the men have their reserve values transferred to such Approved Societies as they may join. For the 400 men a year who, on account of their health, are unable to join a society, the fund provides benefits.

The Deposit Contributors' Fund pays benefits, administered by Insurance Committees, for those (245,000 in 1922) once known as Post Office contributors, who do not join an Approved Society.

The cash benefits are in general administered through societies approved by the Minister, which are controlled by the insured and may not work for profit. In 1924 they numbered in England 987, and included friendly and collecting societies, employers' funds, trades unions or separate sections thereof, and separate sections of industrial assurance companies. They include 98 per cent. of all insured persons. Half the insured are in eight societies. Each society has suitable rules, and is subject to the National Health Insurance Act and the regulations made thereunder. For administration it is allowed 4*s*. 5*d*. per member. Deficiencies in administration in excess of 6*d*. a head are met by levy. Approval of a society may be withdrawn by the Minister for serious maladministration.

Medical benefit is administered by Insurance Committees for every county and county borough. Three-fifths of the committee represent insured persons; one-fifth are appointed by the Council of the county or borough; of the remaining fifth,

three are medical practitioners—two representing practitioners in the area, one appointed by the County or County Borough Council—and the remainder are appointed by the Minister. Local medical and pharmaceutical committees have certain duties assigned to them.

Centrally the Minister deals with the Insurance Acts Committee of the British Medical Association and with the Retail Pharmacists' Union. Administration of medical benefit in England in 1924 cost £320,000—two-thirds on staff. The cost of the benefit in Great Britain is about £9,250,000 a year, of which £7,250,000 go to the 15,000 doctors and nearly £2,000,000 to the 10,000 chemists for drugs and appliances. Seven and a half million persons are treated in a year, at 52,000,000 attendances, and receive 40,000,000 to 50,000,000 prescriptions. Patients have free choice of doctor, and doctors may refuse to accept patients, provided that any treatment immediately needed is given.

A useful development was the appointment in 1920, as part of the central administration, of whole-time Regional Medical Officers. These officers in 1924 dealt, as referees, with 183,846 cases of doubtful incapacity and as consultants with 2,270 difficult cases to expedite recovery.

The Royal Commission, appointed in July 1924 under Lord Lawrence of Kingsgate, reported in March 1926. They recommended that the duties of Insurance Committees should be transferred to the appropriate Local Authorities; that half the future surpluses of Approved Societies should be pooled; and that extensions of benefit, as and when funds permit should comprise, in the following

order, optical and other expert medical advice and treatment, laboratory services, dependants' allowances, midwifery and medical services for maternity, a regional dental staff, dental treatment as a normal benefit, massage and electrical treatment as additional benefits.

Financially, and as a measure for relief, the whole scheme has proved a wondrous success. But in preventing sickness it has failed as yet of its high promise. Success will depend on the redistribution of health services, and on the creation of a Local Government and public opinion capable of taking a wide view of public needs and of giving effect to it.

CHAPTER XII

INFECTIOUS FEVERS

THE defence of the community against epidemics of infectious fevers depends on two methods. In certain diseases, the defence of individuals is secured by vaccination or inoculation, of themselves and of those in contact with the disease, and treatment by the antidote or antitoxin.

Secondly, in all diseases the community may be protected by the notification and isolation of every patient till cured, the disinfection of his surroundings and possessions, the discovery and arrest of the means by which the infection has been spread, and the general improvement of physique and sanitation of the community. By these methods most infectious fevers have in this country decreased in virulence or been stamped out. Scarlet fever now kills 23 per million of the population each year, instead of 971 sixty years ago ; the case-mortality in hospital used to be 12 per cent. ; it is now less than 2 per cent., and for all cases less than 1 per cent. Typhus, jail or spotted fever swept over the land a century ago ; in 1838 it caused 18,775 deaths ; in the four years 1921-4 only 10. Smallpox decimated the country in the eighteenth century, when 15,000,000 of human beings died of smallpox every twenty-five years. In 1838 there were 16,268 deaths from smallpox. In 1925 there were 9.

But fresh cases are constantly being imported

from abroad, and a virulent case may always light up a conflagration in a community no longer salted by the disease. And since cerebro-spinal fever in 1915 killed 241 persons in London alone, and influenza in 1918-19, in England and Wales, claimed 150,000 victims, and throughout the world more than the Great War in five years, we can never relax our fighting defence against the infectious fevers.

The following figures suggest the relative importance of the myriad dangers that threaten the public health.

PRINCIPAL CAUSES OF DEATH, ENGLAND AND WALES, 1925				
<i>Infectious Diseases</i>			<i>Non-infectious Causes</i>	
	<i>New Cases</i>	<i>Deaths</i>		<i>Deaths</i>
1. Tubercle ..	77,773	40,387	1. Heart-Disease ..	64,059
2. Pneumonia ..	55,960	36,990	2. Cancer	51,939
3. Influenza ..	—	12,721	3. Nervous Diseases ..	46,930
4. Diarrhoea and Enteritis ..	—	8,328	4. Bronchitis	35,252
5. Whooping Cough ..	—	6,058	5. Old Age	25,314
6. Measles ..	84,137	5,379	6. Other Circulatory Diseases ..	19,931
7. Diphtheria ..	47,220	2,774	7. Prematurity and Infantile Diseases ..	19,831
8. Encephalitis Lethargica ..	2,635	1,372	8. Other Digestive Diseases ..	19,183
9. Puerperal Fever ..	2,396	1,110	9. Non-venereal Genito-urinary Diseases ..	18,707
10. Scarlet Fever	91,362	988	10. Violence	18,314
Others ¹ ..	30,107	1,976	Others	35,298
Total ..		118,083	Total	354,758

¹ Including (deaths in brackets) 15,003 cases of erysipelas (850 deaths), 2,779 of enteric fever (388), 402 of cerebro-spinal meningitis (354), 345 of dysentery (135), 422 of acute poliomyelitis or polio-encephalitis (156), 3 of malaria, contracted in England and Wales (66), 5,748 of ophthalmia neonatorum (15) and 5,365 of smallpox (9).

Notification

There are at present some twenty infectious diseases of which every case must be notified by the medical practitioner to the Medical Officer of Health, who sends his weekly return to the Ministry and to the County Medical Officer of Health. The Ministry issue a weekly return for the whole country. Further information is obtained from schools, Poor Law, midwives, health visitors and police. All these returns form the basis of action. Cases notified are visited by an officer of the Local Sanitary Authority, the source of infection if possible traced, advice and help offered and action taken.

Isolation

Where practicable, the patient may be isolated at home. The Sanitary Authority has power, on a justice's order, to remove him to hospital if he cannot be well isolated at home. Removal, however, is usually effected by persuasion; justices' orders are rarely required. The authority may provide an ambulance; and many ambulances used in the war were distributed by the Red Cross for this purpose to the provincial hospitals. Wilful exposure of dangerously infected persons or articles in any public place or vehicle, the letting of infected rooms or houses, the lending, giving or selling of infected articles, are severely punished.

Disinfection

Walls are stripped or washed and limewashed; clothing and bedding burnt, boiled, or treated in a steam disinfectant. The authority may give notice to owner or occupier to disinfect, but commonly

do it with their own staff at the expense of the rates. The best disinfectants are steam and heat, light and air, soap and water ; but chemicals still have a limited use.

Quarantine

The household and all who have been in close 'contact' with the infected case must be warned and kept under observation for the full incubation-period of the disease ; attendance at school or meeting, church or cinema, and at least at certain businesses, is forbidden. To this end, suitable leaflets and a good sanitary inspector or health visitor are invaluable.

Carriers

Search must be made for human carriers of disease (enteric, diphtheria, scarlet fever, cholera, dysentery, malaria), animal carriers (rats in plague), or insect carriers (flies, fleas, lice, mosquitoes, in enteric, plague, typhus and malaria respectively). The human carriers may be otherwise healthy, or may themselves be mild, unrecognised cases, or previous cases apparently recovered from the disease. It is often impossible to cure them ; there is no power to isolate the 'healthy carrier' ; so that we are thrown back on tact and persuasion ; and these potent virtues commonly suffice. Often the disease dies out of its own accord : but often it smoulders on, especially in the schools. Here exclusion of suspected children from school is the method most usually practised ; but occasionally closure of schools, particularly in rural areas, is necessary to cut the main lines of spread of the disease.

Here, again, the health visitor, school nurse and teacher are of essential service. Material carriers, especially milk, water and oysters, have often caused fatal outbreaks, and must be tackled vigorously by the Sanitary Authority.

Fever (Isolation or Infectious Disease) Hospitals

Any Sanitary Authority may build or contract for the use of hospitals for their district. With other districts they may form joint hospital districts and boards for the purpose.

County Councils may by order constitute a hospital district of one or more local areas. In London all eleven great fever hospitals, with 6,640 beds, and three smallpox hospitals, with 2,090 beds, have been since 1867 under the Metropolitan Asylums Board (55 members representing the Guardians and 18 nominees of the Minister to represent local interests), while the voluntary London Fever Hospital, with a distinguished career since 1801, has 178 beds, maintained by subscribers and patients. In all there were, by a recent report, 1,048 fever hospitals, with 37,351 beds. Some of these are for smallpox only ; but they, and some beds in others, when not otherwise needed, are used for tubercle ; the majority of beds are used for diphtheria and for scarlet, enteric and cerebro-spinal fevers.

The modern fever hospital consists typically of a series of pavilions (two-floored blocks), 40 feet or more apart, with an administrative block for the staff, a laundry and disinfecting block and a discharging block, with good grounds, all effectively enclosed. Each bed should have 12 feet of wall, 144 square feet of floor and 2,000 cubic feet of air

space. The capital cost of providing a permanent fever hospital at present prices is at least £600 per bed. Maintenance varies from £70 to £200 a bed per year, and may be charged to the patient, but in practice nearly all the cost of maintenance falls on the rates. One bed is commonly provided to 1,000 population in the large towns, one to 2,000 or more elsewhere.

Hospital Policy

With so many mild cases unrecognised, the old ideal of isolating every case is no longer possible. The modern policy is therefore to employ health visitors and nurses to supervise the isolation and treatment of milder cases, when possible, at home, and to secure the active and intelligent co-operation of the people, while reserving the specialised resources of the fever hospitals for the severer types of diseases that require skilled nursing and special treatment, for diphtheria, typhoid and cerebrospinal fever ; for pneumonia, complicating influenza, measles and whooping cough ; for infants suffering from ophthalmia neonatorum and their mothers.

The Alternative or Biological Method

This method, now being revealed by modern research, depends on the understanding of each case as a fight with chemical weapons between a living germ on the one hand, rapidly reproducing itself by the million and fabricating a poison or toxin, and the tissues of the body on the other hand, stimulated by the toxin to produce an anti-toxin in due time and quantity to overpower the

poison. Here we reach three valuable measures of defence.

Treatment by Anti-toxin

Injections of the poison into horses, repeated in increasing strengths, produce large quantities of anti-toxin in their blood, which can then, without injuring them, be tapped, strained and injected into patients suffering, for instance, from diphtheria.

Ascertainment of Susceptibles

Mild strains of the poison, rubbed on to a scratch or injected into the skin, will produce a red mark of harmless inflammation in those only who are susceptible to the disease. This is the basis of the von Pirquet test for tubercle, the Schick test for diphtheria, and the Dick test for scarlet fever.

Prevention by Vaccination or Inoculation

In an ever-increasing number of diseases, either the killed germs or infinitely mild strains of their poison, when scraped or injected into a healthy body, will so stimulate its tissues as to enable it for some time to come (up to twelve months in enteric, nine years in smallpox) to produce anti-bodies enough to resist any invasion of the corresponding disease.

Amongst the staff of hospitals or children in schools the susceptible have thus been inoculated and made immune; and diphtheria has left such school or hospital staff intact, with few or no exceptions, when neighbouring schools and institutions, not so protected, have suffered heavily. Anti-toxin, moreover, has reduced the mortality from diphtheria

in hospitals from 30 per cent. to 6 per cent., and in cases treated on the first day of illness to practically nil; while hundreds of thousands of lives must have been saved in the late war by inoculation against enteric, tetanus, plague and cholera. The Local Authority have power to provide and offer these measures at the cost of the rates; but they have no power to inoculate any person without his consent or that of his guardian. Persuasion and public education are therefore required; and in the next generation the facts will speak for themselves.

Of these measures the most effective has been vaccination, by which in this country smallpox has been reduced from a universal, disfiguring and fatal pestilence to a rare and often minor accident. Inoculation of smallpox matter from human sufferers was introduced from Constantinople by Lady Mary Montagu in the eighteenth century; it reduced the fatality of cases to one-tenth, but spread the infection. In 1798 Jenner showed the better way by inoculation of cow-pox. By an Act in 1838, gratuitous vaccination was provided by the Guardians; in 1854 it became compulsory for infants; in 1871 it became the duty of Guardians to appoint public vaccinators and also vaccination officers, to register vaccinations and secure universal compliance. Even so, however, less than two-thirds of the infants were vaccinated. In 1898 a Unionist Government, to meet the main arguments of anti-vaccinationists, allowed exemption to a parent who could satisfy two justices of his conscientious belief that vaccination would prejudice the child's health; extended the period for infant vaccination from three to six months; postponed it if the house were insanitary

or infectious disease prevalent ; and arranged for the free vaccination of infants at home. In 1905 vaccinations had increased to 75 per cent. of births. But in 1907 an Act substituted for the certificate of the 1898 Act, a statutory declaration to a commissioner of oaths or a magistrate. In 1917 the Sanitary Authorities were for the first time brought into the question, Medical Officers of Health being empowered to vaccinate willing 'contacts.' By using only glycerinated calf-lymph, the occasional infections that previously arose from arm-to-arm vaccination, are avoided. Nevertheless, the percentage of vaccinations to births sank to 38 in 1921 ; while the number of cases of smallpox, in 1917 only 7, rose in 1925 to 5,365. Nor were they all mild. In an outbreak of ten cases amongst eleven persons residing in a single house in Willesden in 1924, six cases were mild, four severe, and of these three died. The lodger, who had been vaccinated and re-vaccinated, alone escaped. Fatal smallpox will occur even in the most sanitary surroundings ; smallpox will always threaten these islands through shipping and passengers ; vaccination is a safe and certain safeguard.¹

¹ The Acts principally concerned with the subject of this chapter are the Public Health Act, 1875 ; Public Health (London) Act, 1891 ; Infectious Diseases Notification Acts, 1889 and 1899 ; Isolation Hospital Acts, 1893 and 1901 ; Infectious Diseases Prevention Act, 1890 ; and Vaccination Acts, 1838, 1867, 1871, 1874, 1898, 1907.

CHAPTER XIII

THE FOUR SCOURGES

IT is well to focus attention on the four chief scourges that ravage the health of the nation.

Tubercle

In 1925 tubercle was the cause of 40,387 deaths—one-twelfth of all deaths in England and Wales. These lives, if saved, would increase the national income by £8,000,000 per annum.¹ The number of new cases notified each year is over 80,000, 60,000 of them pulmonary. At the end of the year 1925 there were some 250,000 pulmonary and 90,000 non-pulmonary cases remaining on the notification registers. Local Authorities in England spend £2,500,000 nett a year in treating and trying to prevent the disease, £1,750,000 being reimbursed by the exchequer, which has also provided £1,350,000 in capital grants, while Local Authorities have provided over £2,000,000 by way of loan. There has been a steady decline in all forms of the disease, the death rate from pulmonary tubercle falling from 3,189 per million of population in 1847 to 788 in 1925. This has been largely due to general sanitary and factory reforms, and to the improved standard of living and general prosperity, as well as to the special measures of recent years.

¹ See Chapter V., p. 30.

The transmissibility of the disease was established by 1868 ; Koch discovered the bacillus in 1882 ; and gradual progress has been recorded and advanced by a long series of congresses,¹ committees,² Royal Commissions³ and official reports. Notification of all cases of tuberculosis by medical practitioners within forty-eight hours became compulsory in 1913 ; and advances were made by the establishment of the School Medical Service in 1908 ; by the National Health Insurance Act, 1911, with its sanatorium benefit (see p. 89), which was withdrawn by the National Health Insurance Act, 1920 ; and lastly by the Public Health (Tuberculosis) Act, 1921, which put a statutory obligation on County and County Borough Councils to carry out approved schemes of institutional treatment for the whole population of their areas. The Public Health Act, 1925, further gave Local Authorities power to remove infective patients to hospital in certain circumstances, and to educate the public on the disease. In Wales the institutional treatment of tubercle is undertaken on behalf of the County and County Borough Councils by the King Edward VII Welsh National Memorial Association.

The technical *personnel* consists of the general medical practitioners ; the school medical officers ; the tuberculosis officers, with their dispensary staffs, health visitors and nurses ; the Medical superintendents of sanatoria and hospitals ; and the Medical Officers of Health and Sanitary Inspectors.

¹ Notably the London Congress of 1901.

² Departmental, 1888, and 1912 (Astor) ; Inter-departmental on Sanatoria for Soldiers, 1919.

³ 1891-5, under Lord Basing, succeeded by Sir G. Buchanan ; 1896 ; 1901-12, under Sir M. Foster and Sir W. H. Power.

The institutions in England (March 1926) approved by the Minister are 483 dispensaries (with 362 tuberculosis officers), 45 being out-patient departments of general hospitals or special clinics; 191 sanatoria and consumption hospitals, with 14,000 beds; 53 isolation hospitals, with 2,300 beds; 23 children's institutions for pulmonary tubercle, with 1,400 beds; 156 general hospitals, with 700 beds; and 51 institutions for non-pulmonary cases, with 3,100 beds; or, in all, 474 residential institutions (264 voluntary) and 21,000 beds (one-third voluntary), without counting a variable number of beds in 92 general hospitals. In Wales there are 15 dispensaries and 87 visiting stations (with 23 tuberculosis officers); 4 sanatoria, with 612 beds; and 12 hospitals, with 781 beds, all provided by the Welsh Memorial Association. These figures exclude Poor Law Institutions, likely to prove more valuable if transferred to County and County Borough Councils by the proposed reform of the Poor Law. The best conservative treatment of non-pulmonary cases can be provided in orthopædic hospitals in the open country, in common with that of non-tuberculous cripples.

Sanatorium treatment is a careful balance of rest and exercise with ample good food, air, sunshine, appropriate occupation and sleep. At the Brompton Hospital Sanatorium at Frimley, Surrey, out of 1,000 early cases, 780 survive ten years, while of cases at all stages in 3 municipal sanatoria the proportion is over 400, and that of advanced cases only 100. The ideal is, therefore, to find the cases early and place them at once, and for so long as they need it, in a sanatorium, preferably combined

with a village settlement, as at Papworth, founded in 1916, in Cambridgeshire. Here, with some 250 beds, 1,778 ex-service men have been treated, and in the village settlement there are now 107 settlers in a population of 270 engaged in workshops, of which the trading account shows an annual turnover of £36,000. The similar British Legion village settlement and training colony at Preston Hall, Kent, takes 145 patients; and there is a smaller village settlement scheme at Barrowmore Hall, Cheshire.

Non-resident employment is also given at the 'Factory-in-the-Fields,' Leeds, and by 'Spero-Leather Workers' in London. But certain vocational training centres, after training 1,252 men with few successful results, closed down in 1925.

The most successful institution, therefore, will combine the functions of hospital, sanatorium, training colony and village settlement; but such institutions are expensive, and depend for success on rare personal factors both in managers and patients. For patients who have to return to their former conditions of life the work of after-care committees¹ is valuable in helping to minimise the risk of relapse and the waste of effort and treatment.

Specific methods of treatment are constantly under observation by the Ministry of Health. M. Spahlinger has not yet been able to provide his sera and vaccines from Geneva for investigation; while other methods have as yet proved either to

¹ Eighty-five, all but five voluntary, in the 154 counties and county and Metropolitan boroughs. The Children's Invalid Aid Association also boards out children from unsuitable homes.

have no specific value or to be dangerously inconstant in their effects. Professor Calmette's method of producing immunity by a vaccine is being adopted in many countries, and the results are carefully watched in this.

But voluntary work must be reckoned as playing a cardinal part in the campaign against tubercle. The National Association for the Prevention of Tuberculosis¹ was inaugurated by King Edward VII, as Prince of Wales, in 1898, with the famous question, "If preventable, why not prevented?" It organised the London Conference in 1901, and, except during the war, an annual conference since 1910; it has helped to promote international conferences; it has concentrated on the education of the public by transactions, pamphlets and handbooks, by lectures and films, travelling caravans and exhibitions overseas as well as at home; it has made a tuberculosis survey of this country; it has pressed forward the organisation of voluntary care committees and itself founded in 1923 the Burrow Hill Training Colony, in Surrey.

Apart from a greater general prosperity, better feeding and better living, it is on increased publicity and voluntary work, on steady development of present methods, on a much improved milk-supply and on continued research, that the country depends for the further reduction of this devastating scourge.

Cancer

Cancer or malignant disease was the cause of 51,939 deaths in England and Wales in 1925—nearly one-ninth of all deaths: more than any

¹ 19 Tavistock Square, London, W.C. 1.

other cause excepting heart disease. The disease is not notifiable, and there is, therefore, no record of its prevalence apart from death. Not being, so far as is known, either contagious or infectious, a considerable change in policy would be involved if the State were to be held responsible for its treatment.

But the figures suggest that it is increasing at a considerable rate. The recorded death-rate has doubled in thirty-five years to 1,336 per million in 1925. Part of this increase is due to improved diagnosis, more complete registration, better medical attendance, increased longevity, and to the ageing of the population from a declining birth-rate. But these considerations hardly apply to cancer of the breast in women during the first twenty years of this century, when the mortality from this cause increased by 28 per cent.

Its causes are still unknown. It occurs in all countries, races and classes of humanity, and in all species of vertebrate animals; but there is no proof that it is hereditary, infectious or contagious, nor that it is influenced by any food, drug or habitation. Chronic irritation of certain parts or tissues of the body¹ certainly promotes malignant growth. Gye and Barnard in 1925 seemed to have traced the cause to a filter-passing microbe with an accessory chemical factor. These views, if proved true, would be of great importance, but of practical value only as a basis for further research.

In 1792 a ward at the Middlesex Hospital was endowed by Mr. S. Whitbread, M.P., for the relief

¹ See Report of Home Office Departmental Committee on Mule-Spinners' Cancer, 1926.

and investigation of cancer ; but no serious progress was made till it developed into a cancer wing, with special laboratories, in 1900. The Imperial Cancer Research Fund, founded in 1901, now spending some £13,000 a year, has initiated a notable series of researches in correspondence with workers in this and other countries. During the last twenty-five years research work has been developed at the Cancer Hospital in Fulham Road ; at the Christie Hospital, Manchester ; in Liverpool, Glasgow and Aberdeen ; in most principal hospitals of the Empire and by independent workers, in many cases with the assistance of the Medical Research Council. Corresponding progress has been made both in Germany and in the U.S.A., where the American Society for the Control of Cancer and the Prudential Insurance Company have been concerned in a comprehensive investigation of cancer mortality in all countries.¹

In May 1923 the British Empire Cancer Campaign was incorporated to co-ordinate, stimulate and give effect to all these efforts. The campaign represents all interests concerned, under the presidency of the Duke of York and the chairmanship of The Lord Chancellor. As instances of their work, a Preliminary Inquiry Committee in 1923-4 sifted 300 offers of cures and applications for help in research work ; in 1925-6, out of 66 applications, it forwarded 13 to the Scientific Advisory Committee for consideration. An Intelligence Committee has issued a questionnaire to missionaries, and is now considering the 300 replies received. An expert deputation has investigated the lead treatment at Liverpool,

¹ *Cancer Mortality Throughout the World*, by F. L. Hoffman.

for which grants have been made. A Radiology Committee, appointed jointly by the campaign and the Medical Research Council, bought £5,000 worth of radium salt and erected an emanation centre at the Middlesex Hospital. In little over three years the campaign had received £138,000. Fifteen county branches are now being organised, and appeals are being made for new research centres. At the same time all institutions, and not least the Medical Research Council, carry on their work, issue reports and need money as before.

In 1923 the Ministry of Health appointed a Departmental Cancer Committee, which has issued to Local Authorities valuable memoranda on several aspects of the subject. The first circular,¹ on cancer in general, gives a concise survey, which may be recommended to the lay public.

In cancer of the breast it is found that the duration of life without operation is little over three years; while of patients operated on at various stages by modern methods, some 52 per cent. are alive and well at the end of three years, 39 at the end of five; but, if operated on at the earliest stage, 94 per cent. are alive and well after three years, 91 after five years, 87 after ten. Research is, perhaps wisely, left to private enterprise, supplemented by the Medical Research Council; but for this principle to be effective private munificence must be forthcoming on a lavish scale. Local Authorities can do much to educate the public to consult the doctor early, and can provide, within limits, for consultation, treatment and transport of patients. Poor Law Authorities could with advantage associate their

¹ No. 426, 1923.

infirmaries, in which so large a proportion of cancer is treated, with the medical schools. Lastly, a periodical overhaul of every middle-aged person by his doctor would be in the interest of the insurance societies, of the State and of the individual, not least in securing the early detection and treatment of cancer before it is too late.

Venereal Disease

This is probably the greatest national scourge, and yet the most hopeful. Till recently the extent of its ravages was unknown. There is no direct record of its prevalence; and it takes so many forms, it terminates in so many guises, and the stigma attaching to it commands such secrecy, that the number of deaths ascribed to it is a mere caricature of the reality.

Syphilis, of which evidence is found in the prehistoric cemeteries of Mexico and Peru, was introduced, it is said, into the Old World by the crew of Columbus in 1493, and was spread through Europe like wildfire by the army of Charles VIII of France, reaching Bristol in 1497. In 1916 the Royal Commission on Venereal Diseases reported that the number of persons infected with syphilis could not fall below 10 per cent. of the whole population in large cities. In one form—as general paralysis of the insane—it accounts for 15 per cent. of the male admissions to London asylums; in another form for 16 per cent. of still-births. In 1,001 pregnancies in 150 syphilitic families there were 172 miscarriages and still-births, and 229 infant deaths, while, of 600 children who survived infancy, 390 were diseased.

Gonorrhœa, again, familiar to Moses,¹ prevalent 3,000 years ago in Japan, known to Cleopatra, current coin in the literature of the Middle Ages, merciless in its cruelty, is a crippling rather than a killing disease. The gonococcus was discovered in 1879 ; but its victims are still four times as numerous as those of syphilis. It probably accounts for half the sterility in women ; for 70 per cent. of all cases of ophthalmia of the newly born ; for blindness, incapacity for work, waste and suffering without end.

Venereal disease is responsible for over half the cases in the L.C.C. blind schools, whose education costs seven times that of the normal child. The Navy lost 225,975 days' work from this cause in 1923 ; the Army (at home and abroad) 1,400 men constantly sick. Finance, common sense and human sympathy, demand strong measures for the prevention of such waste and suffering.

The measures formerly adopted—the regulation of prostitutes and brothels, the compulsory isolation and even correction or expulsion of women found infected—have failed. Under the Contagious Diseases Act of 1864, amended in 1866, prostitutes in twelve garrison towns or naval ports were licensed and examined. But hospital admissions for venereal disease in the Army at home rose from 201 per thousand in 1870 to 275 in 1885. Forfeiture of the men's pay from 1873–9 led to concealment. The Acts were therefore suspended in 1883 and repealed in 1886 ; and the admission-rate fell to 108 in 1904. The Army Medical Advisory Board then advised that voluntary resort to treatment would be more effective than compulsion, and recommended the

¹ Leviticus xv.

diffusion of knowledge and a generous provision of treatment. At Aldershot, work, athletics and institutes were developed. The venereal admission-rate for the Army at home fell to 51 in 1913 and at Aldershot to 30 ; in 1923 to 27 and 28 respectively.

Meanwhile, the germ of syphilis (*Spirochaeta pallida*) had been discovered in 1905 ; the serum test of Wassermann in 1907 ; and a far more effective remedy (*arseno-benzol* or *salvarsan*) in 1910.

In 1899 and 1902, international conferences at Brussels resolved that the regulation of prostitution was inefficient, and should be abolished ; that free and secret treatment should be provided ; and that marriage in certain stages of the disease should be forbidden. The same principles have been endorsed in every responsible inquiry since then, a Commission on Prostitution by the *Union Internationale contre le Pêril Vénérien* in 1925 reporting ' that regulation of prostitution has not at any time or in any country helped to limit the damages caused by venereal infections.'

In 1904 the Committee on Physical Deterioration, in 1909, 1912 and 1913 respectively Royal Commissions on the Poor Law, on Divorce and on Venereal Diseases, the last reporting in 1916, showed the imperative need of State action.

The Public Health (Venereal Diseases) Regulations, 1916, accordingly required County Councils and County Borough Councils to submit for approval schemes for the diagnosis and treatment and for public instruction as to venereal disease. Grants were promised equal to 75 per cent. of the approved expenditure. The Venereal Diseases Act of 1917 prohibited quack treatment.

In 1922 a committee, under Lord Trevethin, of medical experts and two lawyers reported that 'promiscuous intercourse is the main cause of the prevalence of venereal disease; that there is no absolute prevention except continence, and that a single exposure may result in infection'; that the law should be altered to allow chemists to sell approved disinfectants, with instructions for use, approved by some competent authority. The committee urged further facilities for treatment, including that of mental defectives, of seamen and of arrivals from abroad, continuous education of the community, and the elimination of those conditions of life which foster promiscuous intercourse and the spread of disease.

The work is now in full swing. In 1925, in 73 approved laboratories 150,000 Wassermann tests were made; 193 venereal disease centres held 738 weekly sessions, conducted by 401 approved venereal disease medical officers, and 14 hostels treated 866 women and girls. The voluntary hospitals also play an essential part in the schemes. Attendances at all the centres numbered 1,750,000 in the year, the new cases numbering 71,000, of whom 40 per cent. had gonorrhœa, 27 per cent. syphilis, the rest neither. The total number of venereal cases treated for the first time at the centres fell from 85,500 in 1920 to 57,200 in 1925. Of those who ceased to attend in 1925, one-third had not completed a single course of treatment, and only one-third completed the cure, with test and subsequent observation. This alone can assure a patient that he is cured and no longer infectious. Many no doubt are non-infectious who do not endure to the end. But the

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patients who discontinue attendance before cure is pronounced remain a source of anxiety to themselves, and, by presumption, a serious danger to the community. This scheme costs the Exchequer £290,000 a year, and the rates £94,000.

Many cases also are attended by private medical practitioners. But public opinion has yet to lessen the risk from the occasional amateur as well as from the professional prostitute. Nothing but continence is safe, and vigorous health, as in horses and athletes, does not require sexual activity. The surest defence remains in the will of the individual himself.

Propagation of wisdom and knowledge on the subject is, therefore, of first importance, and is being organised by the British Social Hygiene Council,¹ with an Exchequer grant of nearly £10,000 a year. This sum is spent on Press advertisements; production and exhibition of films; meetings, conferences and addresses (over 1,600 in 1925, 21 of them to over 7,000 persons in the principal teaching centres); on courses in social hygiene; literature, posters and slides. A summer school was held at Balliol College, Oxford, in July 1926. The quarterly journal, *Health and Empire*, costs 10s. a year. The council is also a valuable index of information and suggestion from these vast audiences in regard to such cognate matters as women police, order in public places, separation and maintenance, sexual offences against young persons, health insurance, mental hygiene and deficiency, playing-fields and juvenile organisations.

¹ Formerly the National Council for Combating Venereal Disease, of Carteret House, Carteret Street, Westminster, founded in 1914.

Mention must also be made of conditions overseas affecting our own as well as the local problem. The importation of disease, whether by seamen, by aliens or by our own trippers, must depend on such conditions as well as on the ignorance or carelessness of these potential carriers.

The value of international conferences and effective co-operation with the Canadian and American Social Hygiene Councils, the Australian Association for Fighting Venereal Disease, and the *Union Internationale contre le Péril Vénérien*, is emphasised by the British Council, and branch councils have been formed in some of the Colonies and Dominions. In 1925 an international agreement for the free treatment of venereal disease in seamen at and between ports was ratified.

The Wood and Ormsby-Gore reports on Ministerial visits to the West Indian, East African and West African Colonies and Protectorates have drawn attention to the ravages of venereal disease, especially on infant life and future man-power. The Permanent Mandates Commission of the League of Nations has called attention to the need of action. The Colonial Office sent out Venereal Disease Commissions to the Crown Colonies in 1920-1, and in 1924 appointed a Social Hygiene Advisory Committee, which in its first report in 1925 criticised the Singapore Draft Ordinance and put forward alternative proposals. The appointment of a medical adviser at the Colonial Office in 1926 is a step towards further action.

A second Imperial Social Hygiene Congress was held at the Wembley Exhibition in 1925; a third in London in 1926; a delegation from the British

Council went to India in 1926-7 at the request of four provincial governments ; and an address by Sir Auckland Geddes to the Empire Parliamentary Association in 1925 will have brought home, it is hoped, to Members of Parliament and many other responsible persons, the history, effects, needs and prospects of this national and international scourge.

The nation is being educated in mothercraft, child welfare and the physical and moral aspect of venereal diseases. This campaign is one peculiarly fitted for the attention of the women electors of the country, and the appeal to their instincts for home and family life carries with it the seeds of success.

Alcohol and other Drugs

The fourth scourge differs from the previous three in that the essence of it is obvious, universal and attractive, leading to habit and abuse ; that its effects are a commonplace ; that the trouble is preventable and is daily being prevented ; and that every conceivable method of abolishing it has been tried and in some degree or other found wanting. Of these habits the abuse of alcohol is the less dangerous ; it is an open enemy ; its effects are a deterrent, and provoke punitive, restrictive and preventive action. Opium and morphia, cocaine and hashish¹ on the other hand, have no such effects ; small in bulk, they are imported, sold and consumed in secret ; they are cumulative in action till they dominate the whole person ; uncontrolled, they lead their victims irresistibly through paradise to the fires of hell.

¹ *Cannabis Indica*, or Indian hemp.

This scourge, like others, depends, not only on the seed, but on the soil. Alcoholism takes little hold of those who are physically and morally strong ; but it is commonly associated with ill-health and mental defect. Alcoholism and drug-taking are therefore moral and educational questions ; but they are also essential factors in the public health.

Deaths due solely to alcoholism numbered 151 only in 1923 ; deaths connected with alcoholism numbered 562—376 of men and 186 of women—as compared with 1831 deaths in 1913, 953 in 1916 and only 296 in 1918. The mortality from alcoholism alone fell from 18 per million before the war to 2 in 1918 ; rose to 6 in 1920, and now stands at 4 per million. The experience of the National Provident Institution in the years 1891, 1896 and 1901 showed a death-rate among total abstainers of 17, among non-abstainers of 24 per 1,000. But such figures are of little value ; the former group contains the more prudent and careful, the latter the more reckless and careless ; their death-rates would differ widely apart from alcoholism. ‘ Moderate drinkers,’ indeed, ‘ male and female, have a somewhat higher expectation of life than abstainers of the same age.’¹

But of the evil physical effects of excessive drinking there is no doubt. Individual susceptibility is very variable ; but constant abuse of alcohol accounts for 12 per cent. of the admissions to hospitals for the insane. The craving for alcohol is a symptom of neurotic inherited taint ; for of all periodical inebriates 42 per cent. give a history of

¹ Professor Raymond Pearl, Johns Hopkins University, Baltimore.

either drink, insanity or epilepsy in their ancestors. Finally, the habit lowers resistance to disease, and even in moderation impairs mental efficiency.

There were 75,077 convictions for drunkenness in 1925—63,000 of them male, 30,000 of them in London—as compared with 188,877 in 1913. Of 38,027 cases of cruelty reported in 1922 by the National Society for Prevention of Cruelty to Children, 5,649, or 15 per cent., were attributed to drink. Consumption of beer in 1925 stood at 16 gallons per head, that of spirits at 27 gallons per 100 of population. The expenditure on alcoholic drinks in 1914 was 70s. 10d. per head; in 1925 it was £7 9s. At the same time, whereas, compared with 1913, the ratio of wholesale prices was 160 per cent., the ratios of beer and spirit-consumption in volume were 59 and 47 respectively, and that of convictions for drunkenness only 40 per cent.

The liquor laws date from 1551, when licensing was introduced to check evils arising mainly from the frequenting of the common ale-house by disorderly characters. Alcoholism was not considered a national danger till the distillation of spirits was thrown open in 1690, and spirit-drinking increased with alarming rapidity. High licensing, introduced in 1736, proved a failure and was repealed in 1742; taxation above a certain limit drives the traffic underground.

Moderate measures and stricter regulation had a better effect, and in 1828 the law was combined with the system of excise for revenue, and consolidated. The Duke of Wellington's Beerhouse Act of 1830 was intended to check the consumption of spirits by exempting the sale of beer from licensing,

but led to a great increase in the number of beer-houses, till repealed in 1869. In 1904 the Unionist Government introduced the principle of compensation by means of a compulsory levy—up to £1,126,000 in 1925—raised out of the remaining licensees. A large reduction has since followed; from 118,602 in 1869 to 80,420 in 1925; from 59 for every 10,000 of population in 1831 to 21 in 1925. In 1886 and 1901 sales to children were forbidden; in 1908 children under fourteen were excluded from bars. In 1902 clubs were brought under control, the number having nearly doubled in twenty years to 11,780 in 1925, or 3 per 10,000 of the population.

Restriction of hours and Sunday closing, in Scotland from 1853, were also found effective; but the 'grocer's licence,' from 1860, has led to much abuse.

The Inebriates Acts of 1879–1900 have resulted in certified and State inebriate reformatories and in licensed retreats for voluntary patients; but, owing to the close relation of inebriety with mental deficiency, the results have been disappointing.

The most complete experiment was that due to the war. The Central Control Board (Liquor Traffic), set up in 1915, severely curtailed the days and hours of sale, reduced the strength of spirits, prohibited treating, credit sales and canvassing for orders, introduced disinterested management, applied public-house rules to clubs and provided non-alcoholic refreshment in industrial canteens. After the war the country was not prepared for such constraint, and the main restrictions have been removed. But the Board still owns and manages the breweries and public-houses in an area of 700 square miles, including Carlisle, Gretna and Cromarty

Firth, and has pursued an active policy, reducing the number of licences, suppressing grocers' licences, improving public-houses and introducing meals and recreations under 'disinterested management.' On the latter subject a committee, under Lord Southborough, reported provisionally in its favour in 1927. The efficiency attained in the Carlisle experiment is occasionally disputed; but, in many respects, as a guide to future progress it is of high value to all who aim at the improvement of the public-house.

Total prohibition is also on trial under the Scottish Temperance Act of 1913. At the first polls in 1920 nearly half the 1,215 areas were polled; 41 (population 510,000) decided for 'No Licence,' 35 for 'Limitation' and 508 for 'No change.' At the second poll, in 1923, five 'dry' areas 'went wet.' Total prohibition in the United States, under the Volstead Amendment of the Constitution in 1920, has led to great and obvious material advantages but to equally obvious moral disadvantages. It does not appeal to this country; nor does the local version of it—the 'Local Veto' proposed in the Bishop of Liverpool's Bill—meet the essential difficulties of the problem; for prohibition of a widespread, enjoyable, sociable and commonly harmless habit in a virile and independent people would, if effective, lead to a worse reaction, and meanwhile give a fillip to the far greater evil of the drug habit. Under the Dangerous Drugs Acts, control of imports, sales and consumption of such drugs is almost as complete as it can be; and yet there is leakage.

Indeed, the essential defence against abuse of alcohol or drugs is the establishment of an

enlightened public opinion on the subject, fortified by public ridicule and contempt and by the growing desire for a healthy life. The extreme policy of the total abstainers has done admirable service in its time. It is now replaced by that of the True Temperance Association, whose pamphlets on every aspect of the subject may be recommended.¹ The cult of athletics and the patent advantages of active healthiness are mainly responsible for the rapidly-improving conditions. But society can do much to assist the individual by setting a standard, improving the environment, discouraging excess and diminishing temptation, which the individual in the last resort must learn himself to face or to avoid.

¹ Donnington House, Norfolk Street, Strand, W.C.2.

CHAPTER XIV

MENTAL

LIKE other organs of the body, the brain is also liable to deformity and arrest of development, to strain and waste, to ill-health and disease. As the repository of thought, feeling and will it is the master organ, and the consequences of its disorders are vital and far-reaching. Fortunately they are often curable in the early stages, still more often preventable.

Lunacy or Dementia

It is in the grosser form, commonly known as lunacy or insanity, that society has been forced to recognise them; and till recently the law has only been concerned to protect society from the lunatic, and the lunatic both from society and from himself. Mechanical restraint was the rule till George III was affected, and recovered under the humane treatment of Dr. Addington, father of the statesman, Lord Sidmouth, till Charles Reade wrote *Hard Cash* and Cockton *Valentine Vox*. Even now, the report in 1926 of the Royal Commission on Lunacy and Mental Disorder calls for 'a complete revision of the attitude of society in the matter of its duty to the mentally afflicted,' for 'there is no clear line of demarcation between mental illness and physical illness'; and whereas 'the keynote of the past has been detention, the keynote of the future should be prevention and treatment.'

Insanity is a relative term; legally it varies

according to the purpose for which it is declared. Under Conservative and Unionist Governments, the Dillwyn Select Committee of 1877 reported on over forty Acts which were consolidated and amended by the Lunacy Acts of 1889, 1890 and 1891. These, with the rules of the Board of Control and the Lord Chancellor's rules, comprise the present system.

Mentally afflicted persons may in certain circumstances be treated at home without certification. Otherwise, application is made for a reception order by a magistrate, on the authority of two independent medical certificates, or for an inquisition by the Master in Lunacy.

Pauper lunatics, wholly or partly to be maintained out of the rates, are detained by order of a magistrate, requiring only one medical certificate, or two if reported as not under proper care and control. Mental disease may not be treated out of public money in the earlier, more curable stages, unless the cases are certified as insane, except in the Maudsley (L.C.C.) and in the City of London Mental Hospital. Five hundred and forty-five voluntary boarders, however, were in 1926 being treated without certification in registered hospitals maintained by charity or licensed houses conducted for profit.

The number of insane persons, and of institutions for their treatment, in January 1926 was :

In 97 County and Borough Mental Hospitals	107,836
In 13 Registered Hospitals	2,066
In 55 Licensed Houses	2,685
In Broadmoor Criminal Asylum	781
In Naval and Military Hospitals	174
In Metropolitan District Asylums	5,079
In other Poor Law Institutions	11,367
In Private Single Care	379
In Outdoor Relief	3,516
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	133,883

During 1925 there were 17,345 first admissions, 8,551 deaths, and, of those discharged, 6,936 had recovered, 3,277 were relieved and 610 were not improved.

The expenditure of the 97 public hospitals in the year 1924-5 was £7,321,913, giving the average weekly cost of maintenance per patient as 23s. Every County and County Borough Council is required to provide and maintain a mental hospital; the cost of pauper patients is borne by the guardians, who receive a grant of 4s. a week, derived from local taxation licences. The central authority, created by the Mental Deficiency Act, 1913, is the Board of Control (66 Victoria Street, S.W.1.) of 11 commissioners, with 5 inspectors (one a woman), under the Minister of Health. They replaced the Lunacy Commission, and till 1920 were under the Home Office. The Lord Chancellor, through the Judge and Master in Lunacy and the Chancery Visitors, is responsible for the estates of lunatics and the liberty of the subject. The Home Secretary has exclusive jurisdiction in relation to criminal lunatics.

The Local Authorities are the County and County Borough Councils, acting through visiting committees, and the Guardians. Licensed houses in the provinces are licensed by local justices and are subject to visitation by them. The policy for the future was contained in the Mental Treatment Bill, 1923, which passed the Lords, but was held up by the appointment of the Royal Commission, in whose report the following proposals are embodied:

(1) Early treatment without certification, which should be the last resort; (2) Out-patient and in-patient treatment in clinics; (3) Treatment to

approximate to that for physical ailments, and to include occupational measures ; (4) Nursing service and after-care to be improved ; (5) Procedure to be dissociated from the Poor Law, simplified and made uniform for private and rate-aided cases, under County and County Borough Councils.

Charges of ill-usage, carelessness and maladministration of public mental hospitals have been generally disproved by the Royal Commission and by a Departmental Committee in 1922.¹ But there is urgent need for the protection of medical men and others in the *bonâ fide* discharge of their duties.

Criminal Responsibility

When Daniel Macnaughton murdered Sir Robert Peel's private secretary, he was acquitted as incapable of distinguishing right from wrong with respect to the act with which he was charged. 'The Rules in Macnaughton's case' thereupon laid it down that knowledge of the nature and quality of the act at the time is the proper test, and that delusion is a valid exculpatory plea only when the deluding fancies, had they been facts, would have been so valid. But this assumes a man with a delusion to reason sanely on it ; and in 1923, when the case of Ronald True had focussed attention on the problem, a strong legal committee, under Lord Justice Atkin, reported that 'the law does recognise irresponsibility on the ground of insanity, where the act was committed under an impulse which the prisoner was, by mental disease, in substance deprived of any power to resist.' In July

¹ Cmd. 1730.

1926, however, in the case of Flavell, the Court of Criminal Appeal refused to accept their conclusion. This conflict between legal and medical principles illustrates the frontier in social reform, which should never be forgotten, between the interests of the individual and those of the community. Neither the doctors nor the lawyers should be identified with either interest. A closer understanding between the two professions is needed.

Mental Deficiency or Amentia

This is a state of arrested or incomplete development, complicated or induced, it may be, by disease and circumstance. Defectives are classified as: idiots, unable to guard themselves against common physical dangers; imbeciles, incapable of managing themselves or their affairs; feeble-minded, requiring care, supervision and control, and incapable of deriving benefit from ordinary instruction; and moral defectives, showing mental defect and strong vicious or criminal propensities. The Mental Deficiency Act, 1913—a result of the Royal Commission on the Feeble-minded, 1912—is administered, under the Board of Control, by the County and County Borough Councils. Their duties are to ascertain the defectives in their area; to provide suitable supervision or guardianship for them; and to provide institutions for those who cannot be otherwise protected. In few areas are these duties properly carried out as yet. Defectives may be placed under guardianship or in an institution at the instance of parent or guardian, supported by two medical certificates. But, either on their petition

or on that of an officer of the Local Authority, an order may be made by a justice or court or by the Home Secretary for similar disposal of defectives who require care or control. Such orders last for a year, and are renewable for one, and subsequently for every five years. Discharge is vested largely in the Board of Control. On 1st January, 1926, 55,480 mental defectives had been ascertained, and 34,194 were being dealt with under the Act—635 under guardianship, 15,733 under supervision, 17,826 in institutions, which also contained 2,471 defectives outside the Act. In the two State institutions at Rampton and Warwick there were 514—320 of them criminal; in 76 certified institutions, provided by Local Authorities or philanthropic societies, 12,766—1,112 criminal; in approved Poor Law institutions, 6,372—463 criminal; in private certified houses for profit, 264; in 24 approved homes, maintained by contributions or for profit, 381—all outside the Act.

The Central Association for Mental Welfare has 35,940 cases registered at its central office, and, through its 51 local associations in 23 counties and 43 county boroughs, provides, where required, guardianship, supervision, training and after-care. It arranges courses for doctors, teachers, attendants and supervisors of occupation centres, and, through its Occupational and Guardianship Officers and publications, assists the several councils, guilds and societies to arouse interest and deal with the problems of mental welfare, especially in the wise and friendly unofficial visiting of the homes of defectives.

The main requirements to-day are as follows:

more institutional accommodation, only 17 out of the 124 Local Authorities having as yet made such provision ; admission hospitals, villas and colonies ; nurses' homes ; transfer of defective prisoners to certified institutions ; education, training and occupation of defectives ; after-care and local associations, where not yet existing ; and better use of the institutions and resources of the Poor Law.

The Home Office, Courts and Prison Commissioners are also engaged on the problem in connection with prisoners mentally defective or of low mentality, both before and after conviction.

But the co-operation of the Educational Authorities is of outstanding importance in the ascertainment of defective children and in the supervision and education of those who are educable. The Elementary Education (Defective and Epileptic Children) Act, 1899, empowered—and another Act in 1914 obliged—Education Authorities to provide special training for feeble-minded children between the ages of seven and sixteen, whether in special schools or in classes for mentally retarded children in the ordinary schools. Some 10 out of every 1,000 schoolchildren are so defective, destined too often to be a permanent charge on the rates and a permanent trouble to their neighbours and the community, and, above all, to be the parents of future defectives. This weakness must be bred out of the nation. But meanwhile the child crippled for no fault of its own, whether in body or mind, appeals irresistibly for the best life that the community can give it, and for the training that will enable it as far as possible to provide in some small measure for its own livelihood and enjoyment of life.

The future generation is another matter. Sterilisation of the unfit is not yet practical politics. Those interested should read the fair-minded statement of the case by the Board of Control in their annual report for 1925, pp. 63-7. It shows an unanswerable case for far greater use of the provisions for supervision and segregation.

Mental Health

Meanwhile there is need for constant care to prevent mental disease and promote mental health ; to teach the balance between discipline and liberty ; to foster self-control ; to abate noise, conflict and hustle ; to relieve the strain of modern life by the adaptation of desire to what is attainable ; by the encouragement of true sports and games for amusement ; by the promotion of peace and quiet, love of beauty and nature, simple habits and the rural life. So may a healthy mind minister to, and be fostered by, a healthy body. The problem is of the greatest importance, and is in great danger from neglect to-day.

CHAPTER XV

INDUSTRIAL

THE conditions in which men and women work are as important as those of the school or home. The tables of occupational mortality in 1910-12 showed that, if the average death-rate of all males be taken as 100, the corresponding mortality of clergy was only 56, of lawyers 79, of medical men 88; and whereas the mortality of gardeners was only 51 and coal-miners 92, that of the cotton trade was 103, potters 151, coster-mongers 191 and tin-miners 200. In the examination of recruits in Yorkshire during the war, 72 per cent. of the agriculturists from eighteen to twenty-five, 69 per cent. of the coal-miners, 61 per cent. of the engineers, were of Grade I, as compared with 37 per cent. of the workers in woollen trades and 34 per cent. of the tailors.

The number of industrial accidents reported in 1925 was 159,693, 944 of them fatal; the number of cases of industrial poisoning or disease notified was 632; but the preventable loss of health and efficiency is untold. From 25 per cent. to 40 per cent. of the accidents are regarded as preventable; sickness and convalescence represent a loss of £140,000,000 a year, preventable by proper application of medical science to British industry.

The regulation of health in industry has proceeded on independent lines, totally different from

the system described in previous chapters. The expansion of the textile industry in the eighteenth century led to unspeakable conditions ; 74 hours a week was not considered unreasonable, and children in a mill worked up to 18 hours in the 24. The circumstances of feeding and sanitation were often revolting. Potter's rot, phossy jaw, tubercle, asthma, skin disease, unhealthy conditions, discontent and misery were the result. It was reckoned no one's business to interfere.

The factory code was instituted by Mr. Addington's Tory Government in 1802, when the first Factory Act was passed ; and it was Lord Ashley, the seventh Earl of Shaftesbury, who obtained the appointment of a Royal Commission, resulting in the Factory Act of 1833, which forbade the employment of children under nine, limited the hours of children under thirteen to 8 a day, provided for meals, rest and education, and instituted the appointment of four factory inspectors. The Act of 1844 laid the main foundations of factory inspection, instituted the Certifying Factory Surgeons, and attacked the problems of prevention of accidents and of compensation for their victims. In 1847 the Ten Hours' Bill was passed, with strong Conservative support from Disraeli against the bitter opposition of Hume, the Radical leader, and John Bright, for whom it was ' one of the worst measures ever passed,' ' injurious and destructive to the best interests of the country, threatening so formidable a combination of the owners of capital that the House could not successfully legislate against it.' In 1867 the Workshops Regulation Act was passed, and in 1878 the Conservative Home Secretary,

afterwards Lord Cross, carried his consolidating and amending Factory and Workshops Act. In 1888 the Lords appointed a committee on the sweating system, resulting in the important Act of 1891, which began decentralisation by entrusting the sanitation of workshops to the Local Authority. In 1901 Mr. Balfour's Government passed the last consolidating and amending Act, described by the President of the Trades Union Congress as 'the most comprehensive work of its kind yet placed on the Statute Book.'

The system thus evolved is administered direct from the Home Office by the Factory Department under a Chief Inspector, with three deputies and ten Superintending Inspectors over the ten divisions of the country. In all there are 165 men and 34 women inspectors, the medical staff (one senior, three other men and one woman) being under the Chief Inspector, who is not—as were two of his predecessors—a medical man. The field covered—Great Britain, now excluding Ireland—includes, roughly, 144,000 factories, 129,000 workshops, 3,000 docks and 5,000 warehouses. The annual report of the Chief Inspector gives a vivid idea of the progressive outlook of the department in meeting modern needs. In 1925, 211,000 notices of contravention were sent to occupiers; prosecutions were taken in 1,291 cases. Thirty-three codes of regulations for dangerous trades are in operation. Useful inquiries and research-work are undertaken, and the results published. Helped by the 'Safety First' organisation, with its voluntary inspectors, accidents are being scientifically prevented. By the Workmen's Compensation Act, 1923, provision

for first aid is compulsory, and many employers provide nurses, ambulance workers, rooms and lavish equipment. Grinders' rot and woolsorters' disease are within sight of abolition. The campaign against fine dust is taking effect.

Much depends on the work of the 1,772 certifying surgeons, under the supervision of the medical inspectors. Most of them are local practitioners ; a few are engaged for their whole time. Their duties are limited to examination of persons under sixteen and the certifying of them as fit for employment, with any necessary reservations ; to investigation of certain industrial diseases and poisonings which it is the duty of every medical practitioner to notify ; to periodical examination of workers in certain dangerous trades ; and to examinations of sufferers from certain diseases and poisonings under the Workmen's Compensation Act. Their investigation into the causes of accidents was abolished as a war economy in 1916.

This system was reported as defective by a departmental committee in 1924 in that the certificate of fitness for employment was negative, not positive ; no provision was made for re-examination ; and co-ordination with the local school medical and public health services was lacking. The committee proposed that it should be the surgeon's duty to acquaint himself with the processes on which the persons whom he examines are employed ; that he be paid a retaining fee out of public funds ; and that power be given to County and County Borough Councils to undertake these duties. This proposal, incorporated in both 1924 and 1926 Government Factory Bills, is strongly attacked by

the Association of Certifying Factory Surgeons, especially as undermining that freedom from local influence which is vital to the efficiency of their work. Still more do they object to the power proposed to be given to certain employers to appoint their own surgeons. Their objection will be shared by many who prefer the distant central authority ; it will be upheld by those who favour the intimacy of local control, the development of Local Government and the self-control of private enterprise. Both are well-worn battle-grounds, but the trend to local devolution seems inevitable.

In another respect, however, these Factory Bills propose a recentralisation. The Factory Act, 1878, took away the control of sanitation in factories¹ from the Sanitary Authorities, given them by the Public Health Act of 1875, and transferred it to the Factory Inspectors. But the sanitation of workshops² and work-places³—an essential and inseparable factor in the public health—has hitherto been the duty of the Sanitary Authority, carried out by the Medical Officer of Health and Sanitary Inspector. The result has been a dual inspection of workshops by Home Office and Sanitary Authority and a variable standard of administration by the Sanitary Authority. The present Factory Bill proposes to abolish the distinction between factory and workshop. All would be factories ; and the Secretary of State would only delegate to a Sanitary Authority such sanitary duties as he chooses in factories not

¹ Works using mechanical power and certain works of a kindred kind, specified in the Acts.

² Other works, defined in the Acts.

³ Undefined places where persons assemble to work, e.g. a stable-yard.

using mechanical power, where he, with no official knowledge of Sanitary Authorities, is satisfied that the Sanitary Authority will properly perform such duties. The Factory Inspectors would in other districts undertake the work hitherto done by the Sanitary Authority with their usual staff and would require large reinforcement.

But, it is objected, the same microbes attack, the same drains and institutions serve, the workers, whether at home or at work ; and lay inspectors from headquarters can hardly be as efficient in their occasional inspections as the Medical Officer of Health and Sanitary Inspector with technical and local advantages, nor can they know the social and sanitary conditions on which health in the factories must largely depend, nor ensure effective action. The system must be dovetailed into the scheme of public health, and not isolated from it. The present proposal will meet with opposition.

This amending and consolidating Bill, of 140 clauses and 102 pages, now before Parliament, deals with the health, safety and welfare of the workers, especially of women, young persons and children ; the conditions of employment ; records, administration and legal proceedings. It is the considered result of twenty-five years' experience, and, except in its administrative proposals, it will be generally supported, subject to the economic power of industry to bear the burdens imposed on it—a proviso as pertinent to the workers as to shareholders and consumers at the present time.

The study of the actual effect of the conditions of industry on the health and efficiency of the workers was initiated by Bernardino Ramazzini

of Padua two centuries ago. It was fully explored by the Health of Munition Workers Committee, appointed in 1915, whose report in 1918 gives a vivid picture of the objects to be aimed at in the interests both of the worker and of the industry, and of the results obtained in the munition works under the acid test and wide powers of the war.

As a result memoranda were issued on women's and juvenile employment ; on output in relation to hours of work and Sunday labour ; on sickness and injury, causation of accidents, industrial diseases and eyesight ; on welfare supervision, canteens and food, washing, lighting and ventilation, and on health and welfare of workers outside the factory. Studies were also made of such other subjects as industrial fatigue and its causes, the comparative efficiencies of day and of night work, lost time and incentives to work, with special reference to wages. The consequent suggestions were summarised in 1917 in a useful handbook, *The Health of the Munition Worker*.

Welfare

The Welfare Section of the Ministry of Munitions, instituted in 1916, rightly set a lead, which is being followed by enlightened industry throughout this and other countries. Its work is carried on by the Medical Inspectors of Factories and by the Industrial Fatigue Research Board, a branch of the Medical Research Council. The voluntary National Institute of Industrial Psychology assists in the application of the knowledge so gained to the industries and workers.

Since 1916¹ the Home Secretary may require occupiers of factories to provide for meals, drinking water, protective clothing, first aid, seats in work-rooms, washing, clothing accommodation and supervision of workers. Statutory Welfare Orders on these matters are in force in 14 industries. Voluntary welfare schemes, still more, are providing even dental clinics, health visitors, baths, recreation grounds and sanatoria. The Summer Time Acts, 1922-5, have proved an inestimable boon in enabling the worker to turn his leisure hours to healthy advantage. The Industrial Welfare Society, under the presidency of H.R.H. the Duke of York, with some 700 member-firms and an annual seaside camp of Public School-boys and young workers, does much to forward the welfare movement.

Employment of Mothers and Children

By the Education Act, 1918, no children may be employed till they leave school at fourteen. The half-timer is thus abolished. Women are not allowed to return to work till four weeks after confinement, and receive the very material Maternity and Sick Benefits from National Health Insurance. The Washington Convention of 1919, to forbid their employment for six weeks before and six after confinement, is not likely to be ratified (see p. 59).

Women and Young Persons

These, to the age of eighteen, are protected by special provisions, forbidding or limiting their employment in certain processes and regulating

¹ The Police, Factories, etc. (Miscellaneous Provisions) Act, 1916, Section 7.

their hours of work, rest and overtime ; for the medical man knows there is no equality in physique between sexes, and public opinion still expresses in legislation its care for the less muscular sex.

Hours of Employment

Regarding hours of employment, accurate experience is the only true guide. In one experience a 3-per-cent. reduction in hours resulted in a 5-per-cent. increase in output ; in another, reduction to 40 hours resulted in reduced output. The Washington Eight Hours' Convention of 1919 is not yet ratified. But the 48-hour week is almost universal, and the 60-hour week allowed by law is rare, except in homework. Experience, research into fatigue and efficiency, and, not least, publicity, with the constant vigilance and tactful advice of the inspectors, is doing far more for the workers' health and welfare than any coercive legislation. But the daily journey to and from work—frequently taking three to four hours of the twenty-four—is a serious and growing menace, to be met only by decentralisation of industry, now being tested in the garden-city movement.

Bakehouses and Night-Baking

Night-work of any kind is plainly contrary to nature and opposed to a healthy and contented life. A very high standard of sanitation is rightly required of bakehouses, and in retail bakehouses the Medical Officer of Health has all the powers of a Factory Inspector. Underground bakehouses are forbidden unless so used before 1901 and found suitable. Is night-baking necessary? In 1919 the Mackenzie

Departmental Committee reported in favour of its abolition, with certain necessary exceptions, after two years. In 1924 the International Labour Conference at Geneva proposed a draft convention to abolish baking during seven consecutive night hours, with necessary exceptions. The British Government would not accept the convention, unless hotels, restaurants, institutions and the master-baker were excluded and it were shown that no increase in the price of bread would result. The Royal Commission on Food Prices reported that if new bread is to be supplied as now there would be a slight increase in cost. The proposed amendments were not adopted by the seventh International Labour Conference at Geneva in 1925, and no action is proposed.

Lead Poisoning

In 1925, 326 cases of lead poisoning were notified and 13 deaths. In the years 1900, 1901 and 1902 the number of cases was 1,053, 863, 629, and of deaths 38, 34, 14. The reduction has been largely due to regulations, providing especially for exhaust ventilation in factories to remove fumes and dust, for personal cleanliness and for medical supervision. But lead poisoning in house-painting and certain other industries continues. Two departmental committees appointed in 1911 recommended total prohibition of lead paint. During the war, however, the suggested substitute of zinc was largely tried and found wanting, while since 1921 the main danger from the preliminary rubbing down of the old paint has been proved to be avoidable by wet rubbing down with waterproof sand-paper. In 1921 the International Labour Organisation at Geneva

adopted a draft convention prohibiting, with considerable exceptions, the use of lead in internal painting of buildings, and its use by women and young persons in any industrial painting. But in 1923 the Norman Committee reported against total prohibition, and in favour of regulation. The Lead Paint (Protection Against Poisoning) Act, 1926, accordingly prohibits lead painting of buildings only by women and young persons, and gives the Home Secretary power to make stringent regulations to minimise the risks that remain. If these measures are found insufficient, a more drastic Bill, based on prohibition, is to be introduced. Prohibition, after all, is no scientific solution of any problem.

Home-work

The Lords Committee enquiring into sweated industry in 1888 showed the outrageous conditions in which much home-work was done; and the Factory Act, 1901, gave Sanitary Authorities power to prevent it in dwellings infectious or injurious to the workers' health. But the best results have been obtained by the duty laid on employers to supply the Sanitary Authority every half-year with names and addresses of outworkers. The visits of the sanitary inspector, health visitor and medical officer of health are then most fruitful in securing a remedy for unhealthy conditions without depriving the workers of their livelihood. Home-work suits married women especially; and, although it has decreased since the war, outwork (not necessarily home-work) in certain trades shows no decline. Moreover, the extension and cheapening of electricity

supply is bringing mechanical power into the homes, and may open up new developments in home-work, to the advantage of women's health and of their home life.

The Health of Shop Assistants

The health of this class, including those in warehouses, public-houses and refreshment-houses, depends on the public health law, administered by the Sanitary Authority, and on the Shop Acts, 1892-1912, administered by County and Borough Councils, whereby the hours worked by young persons, including meal-hours, are limited to 74 in the week, and one seat must be provided for every three female assistants.

The Employment of Children

The Employment of Children Act, 1903, incorporated in the Education Act, 1921, enables County and Borough Councils and Sanitary Authorities of large urban areas to regulate the employment of children. Street-trading under the age of fourteen is forbidden, and no child under fourteen may be employed during school hours. Between the ages of twelve and fourteen work, outside school hours, is controlled by by-laws. The Children Act, 1908, consolidated the law on the protection of infant and child life, adding powers with regard to intoxicants, smoking, verminous conditions and safety at entertainments.

Regulation of Offices

There are nearly a million clerks and draughtsmen, excluding those under Local Authorities or

in the Civil Service. Of these, nearly half are females. Male clerks, with certain exceptions, show a slightly higher death-rate than that of all males of the same age, and a death-rate from tuberculosis higher by 50 per cent. Many clerks, however, are by nature less robust than the average, choosing their calling for that reason.

Many Sanitary Authorities and Medical Officers of Health have complained that they have no power to inspect offices and secure their proper sanitation—ventilation, lighting, heating, cleanliness, conveniences, washing and feeding arrangements, and space. In London, 8 of the 29 Borough Councils find no difficulty in inspection of offices; but 18 recently supported the Metropolitan Boroughs' Standing Joint Committee in approaching the Minister of Health for legislation to grant powers of inspection and supervision of offices. The Public Health Acts give powers over work-places; but it is doubtful if 'work-place' legally includes an office. A test case is to be taken in the courts. If the decision excludes offices from the term 'work-place,' then a simple amendment of the law will suffice. The right of systematic inspection is essential. Meanwhile, the Bill introduced by the Labour Party is more drastic than is warranted; the simpler method of including offices within the common local sanitary administration seems preferable. But the problem presses and must be solved.

Coal-mining

It is surprising to find that no organised system exists for the medical and sanitary supervision

of the coal-mines. About 1,031,500 men were employed in the British coal-mines in May 1927, some 200,000 above ground, nearly half a million at the face. As the Royal Commission, 1925, reported, miners are a healthy class, with mortality slightly lower, but in 1921-3 slightly higher, than that of all occupied males of the same age. 'There is no evidence to show that, apart from accidents and industrial diseases, mining is not a healthy occupation.' But of every 100 underground workers, during a career of 20 years, 2 are killed and 9 suffer serious injury; there are between them 353 minor accidents, while 8 will suffer from nystagmus (oscillation of the eyes, leading to nervous breakdown), and 8 from 'beat' hand, knee or elbow or from synovitis of the wrist. Workmen's Compensation costs £3,000,000 a year, or 3d. per ton of coal produced. Nystagmus has rapidly increased of recent years to 9,000 cases—half of them new—in the year, costing the industry about £1,000,000 a year. This and most other mining disabilities can probably be prevented by the effective application of science with the convinced co-operation of the workers.

Mines are controlled by the Mines Department of the Board of Trade, administering, amongst others, the Coal-Mines Regulation Acts of 1887 and 1908 and the Mining Industry Act of 1920. It has no medical service; but applications for the post of medical adviser were invited in July 1927. The need is obvious and urgent. In 1921 the Safety in Mines Research Board, and in 1922 a Health Advisory Committee, were appointed. These bodies work in the Board's experimental

stations and in university and other laboratories through committees of scientific experts and of practical representatives of the mining industry. Their annual report shows the scope and suggests the value of their work, which in 1925 cost only £44,600—£700 from the Parliamentary vote, the rest from the Miners' Welfare Fund. Much useful work on their behalf is also undertaken by the Medical Research Council. Effective liaison is established with the United States.

The Welfare Movement is the main agency for improving the health of the miners. By the Mining Industry Act, 1920, a compulsory levy of 1*d.* a ton provides over £1,000,000 a year for the Miners' Welfare Fund, which is administered from within the industry by a central and by district committees, half their *personnel* representing the miners. This fund, which also finances the Research Board, is spent mainly on playing fields, institutes, clubs and libraries; hospitals and convalescent homes; ambulance and nursing services; electric massage; pithead baths and miners' education. As for pithead baths, the case is unanswerable, for the sake alike of the miner and of his wife. If a man can go to and leave the mines clean, comfortable and in his best clothes, he can mix freely with the outside world, and the industry is rid of a great handicap. Other obvious changes are required. Pithead kitchens, sending hot-jacketed food down into the workings, a proper supply of drinking-water underground, as is compulsory for pit-ponies and in every factory (instead of the limited day's supply taken down by the miner with his food, lamp and tools, to replace the two pints of moisture lost every hour

by each man in a hot pit—an obvious cause of inefficiency, as athletes know); proper sanitary arrangements; better illumination—all would tend to health, efficiency and contentment. Absenteeism (8 per cent. of time lost in 1924), both ‘unavoidable’ and ‘avoidable,’ would be largely reduced; and it is noteworthy that the varying percentage of votes in favour of strike or against agreement in the several coalfields corresponds almost exactly with their varying mortality rates. It is a certain corollary of the experience in other spheres of the nation’s life that a suitable medical staff, supported by the administration, inspecting freely, advising impartially and at first hand both the Minister and the workers, managers and owners, would do more to promote health and safety, efficiency and contentment than any other measure proposed.

Mercantile Marine

In 1924, there were 234,101 men employed in merchant ships, 167,000 being British, 12,000 foreigners, 55,000 lascars. The deaths occurring during employment or on discharge from hospital were returned at 820 British, 103 foreigners, 340 lascars; total, 1,263; viz. 565 from wreck or other accident, 698 from disease. This is only part of the story. The Permanent Consultative Committee on official statistics in 1926 made suggestions for the decennial calculation of accurate mortality-rates. Meanwhile there is much preventable disease—enteric, malaria, smallpox, tubercle and pneumonia—which no official effort is made to prevent; there is no systematic investigation of

the cause of accidents ; no medical report is made on the health of the service ; there is no one in charge.

Such control as exists is vested in the Board of Trade under the Merchant Shipping Acts of 1894 and 1906, by which 'proper accommodation' is to be provided. The Board issues instructions prescribing cubic space and other requirements. Those of 1923 show a considerable advance, although still behind those of the Ministry of Shipping during the war, those of the Admiralty for transport ships, and those of Australia, the United States, Norway and other foreign countries.

These criticisms have been specifically raised by Port Medical Officers of Health since 1894 and pressed ever since by the Royal Sanitary Institute and the Association of Port Sanitary Authorities. The whole question, not only of sanitary construction, but of use and maintenance, of dietary and welfare, of medical examination of the crew and the prevention of disease, and not least of medical supervision and advice in the Board itself, requires the careful consideration of the Board and the Ministry of Health, with the assistance of the Admiralty, of officers and men of the merchant service, of shipbuilders and of Port Sanitary Authorities.

Many shipowners have, indeed, made more generous provision than usual for their crews, and it has not always been appreciated. Individual seamen are often lacking in care and cleanliness ; standards of living, habits of a lifetime, are not easily changed. But these objections, once equally common on land, are the result of the conditions

that have hitherto prevailed at sea. In the interest of future seamen and shipowners alike a large measure of improvement is required, at least with new ships to be built, and the central machinery for it should be installed without delay. In Anson's voyage round the world, eight ships manned by 2,030 officers and men set sail in 1740 ; in 1744 only H.M.S. *Centurion* returned, and three out of every four had died of disease. But in 1775 Captain Cook wrote to the First Lord of the Admiralty that in over three years at sea he had lost one man by disease, one from a fall and two drowned, out of a crew of 120.

In factories and workshops, shops and offices, in mines and at sea, it is on the goodwill and co-operation of masters, managers and men, under medical guidance, that we must mainly rely for improvement in health and welfare ; and to this end the necessary conditions must be guaranteed.

CHAPTER XVI

THE PROFESSIONS

Medical

IN 1926 there were 51,738 medical practitioners on the register for the British Isles—one for every 927 of the population, or, excluding those abroad or retired, about one in civil practice for every 1,400.

The principal Medical Act of 1858, ten times amended since in detail, was framed solely for the protection of the public. 'Whereas,' ran the preamble, 'it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners: Be it enacted,' etc. Previously anyone could pose as a medical man. By the Act, properly qualified men are labelled. Others may continue to practise, but without the label. As the best policy in the public interest, the mode of securing and maintaining the high standard of professional and moral qualities required was entrusted, not to any body representing the whole medical profession, but to a General Medical Council, set up by the Act for the British Isles, still including the whole of Ireland. This council consists of 38 members, mostly appointed for five years, 18 representing universities, 9 the medical corporations, with 5 persons appointed by the Privy Council, and only 6 elected by a postal vote of all registered practitioners. Three more are appointed by the

Privy Council for dental business only. Save one nominee of the Privy Council, all 38 are medical men. The four functions of the council are registration, standardisation of medical education and of examination, maintenance of standard of professional conduct, and codification of medicinal remedies. The first duty consists in the revision and issue of the annual Medical Register ; the fourth in periodical revision and issue of the British Pharmacopœia. In its supervision of the medical curriculum the Council recommend that every medical student should be registered as such at a minimum age of seventeen, after passing accepted examinations in general education, and in chemistry and physics ; he must spend at least five years—and he generally spends more—before he can sit for his final examinations in medicine, surgery and midwifery, and until he has passed all he cannot be registered.

The efficiency of medical education depends largely on the Anatomy Act, 1832, which was passed as a safeguard against 'resurrection-men' and greater abuses. 'Whereas . . . it is highly expedient to give protection to the study and practise of anatomy,' it allows those in lawful possession of a body, subject to any wish of the deceased or objection of relatives, to permit the anatomical examination of the body, the remains being subsequently interred. An inspector is appointed by the Home Secretary to secure proper observance of the Act.

It is the disciplinary duty of the General Medical Council which attracts public attention. For this duty it sits as an open court, with the aid of its solicitor and of a distinguished judicial assessor, but with no power to enforce the attendance of

witnesses, administer oaths or call for documents. The only judgment it may give is that devised by Parliament—'guilty of infamous conduct in a professional respect'; the only sentence, that the name be struck off the register. From this there is no appeal. Moral fault, technical fault, publicity for personal gain, support of unqualified practitioners—these are the chief offences, endangering the public safety. In the five years 1922-6, 84 cases were heard and 24 names erased; but 21 cases were postponed, 51 dismissed and 13 names restored to the register.

Any person, however trained or untrained, has a perfect right to practise homœopathy, osteopathy or any other unorthodoxy. Properly trained and registered practitioners also have an expressed right under the Act to profess and practise homœopathy, osteopathy or any other system of medicine; but without the proper training, deliberately laid down as a public safeguard, the unorthodox practitioners are rightly denied that assistance from registered practitioners in consultation which would stultify the Acts of Parliament and blind the public as to the risks they take in consulting unregistered men.

There is no body directly representing the whole medical profession; the General Medical Council has only 6 direct representatives in a body of 38. But the British Medical Association has 32,000 members, and is a federation of its 277 divisions, grouped into 93 branches, throughout the Empire. It is not a trade union, but a limited liability company, licensed by the Board of Trade as 'not for profit.' It does much good scientific and educational work. It does not undertake individual medical defence which is the special function of

the Medical Defence Union and similar bodies ; but it is the main channel for negotiating conditions of medical service with Government departments.

Diplomas in Public Health or equivalent degrees are given, after a course which includes five months' work in a laboratory, three months at a fever hospital and six months' practical experience with the Medical Officer of Health of a large area. The final examination is open only to medical men two years after registration. This qualification is required—except where the Minister gives exemption—for future appointments as Medical Officer of Health and for most other appointments in the public health services. Of the 1,809 Sanitary Authorities and 62 County Councils, one-third have appointed whole-time Medical Officers of Health. The scale of salaries now approved for these appointments varies between £800 and £1,800, according to population, with allowances for expenses officially incurred, reasonable security of tenure under the Public Health (Officers') Act, 1921,¹ and pension rights after ten years' service, or at sixty-five, under those Local Authorities who have adopted the Local Government and Other Officers' Superannuation Act, 1922.

Dentists

In 1926 the Dentists' Register, first set up by the Dentists' Act, 1878, contained the names of 14,199 persons, of whom only 6,194 had medical, surgical or dental qualifications. Others were registered under the Dentists' Act, 1921 (amended

¹ Similar security is given to the part-timer under the Sanitary Officers' Order, 1922.

in 1923 to provide for those who had served during the war), by which all engaged for five years in *bona fide* dental practice could register, other practitioners could register if they passed the prescribed examination within two years, dental mechanics of five years' experience within ten years; but otherwise and in future none can be registered, and, unlike medicine and surgery, none can practise dentistry unless on the register. Dentists, like midwives, enjoy a monopoly in their practice.

The 1921 Act established a Dental Board of a chairman and twelve members—6 elected, 3 appointed by the General Medical Council, and 3 not being medical or dental practitioners—for the purposes of the register; but in cases of refusal to register, or of erasure from the register, there is an appeal to the High Court. The course of study and examinations remain with the General Medical Council, and provide for a four years' course—including anatomy and physiology, medicine, surgery and anæsthetics, as well as dental subjects, three years at least to be spent at a recognised school—and a minimum age on qualification of twenty-one.

Sanitary Inspectors, etc.

The training of Sanitary Inspectors is an excellent example of health-work, initiated by private enterprise, proving its worth and becoming first recognised, then adopted and finally made compulsory by Government. In 1877 the—now Royal—Sanitary Institute inaugurated examinations in London, and certificates of success for Local Surveyors and Inspectors of Nuisances; those for surveyors were transferred in 1894 to the Institution

of Municipal and County Engineers for the appointments of Borough Engineer and Surveyor ; those for inspectors were in 1889 extended to provincial cities, in 1901 to the Dominions and Colonies. In 1899 the institute joined in forming the Sanitary Inspectors Examination Board for London, but continued its own examination until, in 1925, ' the Royal Sanitary Institute and Sanitary Inspectors Examination Board became the only body to give future certificates recognised and required for those appointments of which the Exchequer undertakes to pay half the salary. The regulations require a candidate, with a minimum age of twenty-one, to have passed an examination in general education and certain specified subjects, to have attended a six-months' course of demonstrations and spent a year as Sanitary Inspector or in a public health department, or else six months in such a department and three years in a building craft. The institute also in 1899 instituted courses of instruction, examinations and certificates for meat inspectors and in school hygiene, in 1908 for advanced inspectors and health visitors, in 1916 for child welfare workers, in 1921 in tropical hygiene.

Health Visitors

The need and advantage of home visiting, with its intimate personal influence, found expression in the Maternity and Child Welfare Act, 1918, and in the regulations concerning school health and tubercle. The Board of Education (Health Visitors' Training) Regulations, 1919, initiated the training, and gave grants for this most valuable new functionary, working under the Medical Officer of Health, in the health services of Local Authorities.

In April 1925 the Ministry of Health took over this responsibility, and laid down the following conditions for the course and certificate which will be requisite for every whole-time health-visitor appointed for the first time after 1st April, 1928 :

(a) For a three-year-trained nurse (qualified for the general part, or part for nursing of sick children, of the Nurses' Register), the certificate of the Central Midwives' Board and an approved six months' course of sanitary training ;

(b) For those not so trained, six months' training in a general, fever, or children's hospital, the certificate of the Central Midwives' Board and an approved two-years' course of sanitary training. For new entrants to the profession of health visiting, from three and a half to four years' training will in future be required. The nursing and midwifery interests of the State, and the training of the *personnel* involved, clearly point towards their consolidation under a single statutory board or council and a separate department at the Ministry of Health.

Nursing

The profession of nursing, as now understood, was only established at law after the Great War in which it had played so worthy a part, by the Nurses' Registration Act of 1919 for England and Wales. This Act instituted the Nurses' Register and the General Nursing Council, provided for reciprocal privileges for nurses registered in other parts of the Empire, and gave to registered nurses only the sole privilege of using that description and any title, uniform or badge with that implication. In future the council, holding office for five years,

will consist of 25 persons—2, not being medical men or nurses or officially connected with nursing, to be appointed by the Privy Council, 2 by the Board of Education, 5 by the Minister of Health, and 16 to be elected by registered nurses. The register, opened in August 1921, consists of a general and five supplementary parts, and the numbers on the register for England and Wales in January 1927, after deduction of deaths, withdrawals and non-renewals, were: general, 40,376; supplementary—male, 199, mental, 6,383, mental defective, 340, sick children's, 1,056, and fever, 2,248. The conditions for admission to the register, prescribed by rules of the Council, allow for the inclusion after 1925 only of nurses who have produced certificates of three years' training in a complete training school, three and a half in an associated, or four in an affiliated, training school, and have passed the State preliminary and final examinations.

The Disciplinary and Penal Cases Committee had, up to the end of 1926, met fifteen times, considered four cases and removed three names from the register. The Act allows an appeal to the High Court.

There are many unofficial associations of nurses, such as the Royal British Nurses' Association; but one of the most important is the College of Nursing, founded in 1916, and numbering 25,000 fully trained nurses in over 50 branches throughout the British Isles, under an elected Council and Scottish Board. The interests of district nursing are mainly promoted by the Queen Victoria Jubilee Institute for Nurses, the home of the 2,500 Queen's Nurses on the Queen's Roll, and of the village nurses, working under 1,300 associations, grouped

under 57 county associations and affiliated to the institute. These nurses do much spade work for the health of the nation—work of inestimable value alike to the individual, the family and the nation.

Midwifery

Under the Midwives Acts, 1902 and 1918, as amended in 1926, no one other than a recognised student in midwifery may practise as a midwife except in sudden and urgent necessity, or under the direction and personal supervision of a doctor, unless certified either by examination under the Act or by other approved certification before 1905, or by having been in *bona fide* practice for at least a year before 1902. The Central Midwives Board of 14 persons—8 men (7 medical) and 6 women (1 medical)—formerly under the Privy Council, now under the Ministry, publishes an official Roll of Midwives, holds examinations and penal sessions, regulates training, issues and cancels certificates, and publishes rules regulating and supervising the practice of midwives. Of the 62,680 midwives on the roll in 1925, only 14,278 were in practice. The course of training is now for twelve months, or to certain trained nurses, six. The Ministry give grants of £35 or £20 a head to approved institutions for training, whether in hospitals, 'homes' or Poor Law institutions, or under county nursing or other voluntary associations.

Pharmacy

Pharmacy as an organised profession dates from the incorporation of the Pharmaceutical Society in 1843. The Society of Apothecaries, incorporated

by Royal Charter in 1617, gives licences to practise both as physician and druggist, and certificates for dispensing as assistant to an apothecary. The Pharmacy Act, 1852, empowered the Pharmaceutical Society to conduct examinations for the qualification of a pharmaceutical chemist, and the Pharmacy Act, 1868, examinations for the lesser qualification of chemist and druggist, now required for an open shop for the sale of poisons. One or other qualification is required for a contract to dispense under the Insurance Acts. The Council of the Pharmaceutical Society was thus made the ruling body of its profession in respect of training, examination and registration.

From 1927, by recent regulations of the society under the Acts, a student must pass an examination of the School Certificate standard before registering as such ; then train for, and pass, a preliminary science examination, and, after spending two years in practical training under articles of pupilage to a registered pharmacist and a year's instruction at an approved institution, may sit for the Chemist and Druggist Qualifying Examination, or, after one year's practical training and two years in an institution, for the Pharmaceutical Chemist Qualifying Examination, which will qualify, according to standard attained, either as pharmaceutical chemist or as chemist and druggist. The minimum age for this final examination is twenty-one. The London University confers a degree of Bachelor of Pharmacy, which is similarly registrable. The Pharmaceutical Society maintains the statutory Registers of Pharmaceutical Chemists and of Chemists and Druggists, the total number of registered persons at the end of 1926 being 20,542.

Veterinary Medicine

The Royal Veterinary College of London was established in 1791, and the Veterinary Colleges of Edinburgh, Glasgow, Royal of Ireland, and Liverpool respectively in 1823, 1862, 1900 and 1904. In 1844 a Royal Charter was conferred on the London and Edinburgh graduates, creating the Royal College of Veterinary Surgeons, and giving them in theory, but not in practice, the sole right to the professional titles. The Veterinary Surgeons' Act of 1881 made it an offence for an unregistered person to use the title, and required the Royal College of Veterinary Surgeons to make provision for examination of students in England, Scotland and Ireland, and to maintain the annual register of those qualified. The profession is thus governed by the council of the college, numbering 32, elected annually by the registered members. The course of instruction lasts four years; the percentage of failures at the examinations is about 25. The annual register contains some 3,500 names, 2,500 being those of men in active practice in the United Kingdom. The college has also established the higher qualification of the Fellowship (F.R.C.V.S.), and a Diploma in Veterinary State Medicine (D.V.S.M.). The Universities of London, Edinburgh and Liverpool give the degrees of B.Sc. or B.V.Sc. in the subject. The official and statutory privileges of qualification consist of a monopoly in every title or description suggesting veterinary practice, and the sole right to recover fees in court for veterinary practice or advice.

CHAPTER XVII

SCOTLAND¹

Population and Distribution

AT the census of 1921, 4,882,497 persons were living in Scotland, an increase of slightly less than 3 per cent. over the number in 1911, but far more than double the number found at the census of 1821. The facts elicited at successive censuses indicate but a slow increase during recent years. There are 108 females to each 100 males.

The population is very unevenly distributed. About nine-tenths of the people reside within a belt which is approximately one-tenth of the area of the entire country, a belt which crosses the middle of Scotland diagonally. As London is to England in respect of overwhelming size, so is Glasgow to Scotland. The population of Glasgow—1,034,000 in 1921—is more than one-fifth of the population of the whole country. The other three cities—Edinburgh, the capital, Dundee and Aberdeen—taken together, contain almost three-quarters of a million inhabitants. Thus almost exactly two and a half millions—or more than one-half of the people in the country—are living in large centres of population. Of the remainder, many live in the smaller

¹ In many respects the sanitary features and the machinery of Public Health Administration in Scotland are similar to those in England. In this chapter, those points only which evince essential differences have been emphasised.

townships or in the densely settled mining areas of Lanark, Ayrshire and Fife. Hence far less than one-fourth of the inhabitants of Scotland are living under conditions which can strictly be called littoral or rural.

General and Infantile Death-Rates ; Birth-Rate

The death-rate in Scotland in 1925 was 13.4 per 1,000 of the population; in 1923—the lowest on record—12.9. In the quinquennium ending 1875 it averaged 22.6; in the like period ending 1900, 17.9. The average age at death of those who died in Scotland in 1925 was over $46\frac{1}{2}$ years.

The infantile death-rate (deaths under one year per 1,000 births) was 90.6 in 1925. It was 132.1 in 1875, and 130.6 in 1900. In 1923 it was 78.9, the lowest recorded. It is only during the last decade or so that the rate has fallen steeply. The decline is chiefly ascribable to the lowered incidence of infantile diarrhoea and of tuberculosis. The rate of decrease in England is now greater than in Scotland.

The birth-rate in Scotland in 1925 was 21 per 1,000 of the population. In 1875 it was 35; in 1885, 32; in 1895, 30; in 1905, 28; in 1915, 23. The fall is thus seen to be steady and uniform.

The Central and Local Authorities Responsible for Health

The machinery for local health administration in Scotland has grown up almost at haphazard. The basic duties of health administration are vested in the local authority, which is the Town Council in the case of the 201 burghs, and the District Committee in the case of the sub-divided county areas.

The District Committee is only subject to the County Council in a very limited degree ; and such powers of supervision as the latter possesses are very rarely exercised.

Alike in town and in county districts, the Local Authorities are entirely elected bodies. In the burghs the Town Council, formerly sitting as the Police Commission, has long been the public health authority ; but rural sanitation was formerly a matter of parish concern, and without any very progressive or productive result ; until the Local Government (Scotland) Act of 1889 created the County Councils and their District Committees. Active and enlightened hygiene in rural Scotland may almost be said to date from 1890.

It may be granted that the District Committees perform their health functions well on the whole. The burghal health authorities perhaps do their best also ; but they are handicapped in many cases by their smallness and by the poverty which necessarily accompanies a small rateable area and a small rateable population. The remedy for such difficulties is the creation of larger areas for health administration.

But the main defect in the public health machinery of Scotland is its complexity. Such subjects as scavenging, water-supply and the infectious fevers are, as we have seen, in the hands of the local health authorities of town or county district, as the case may be. But the health of the school child is the care of the Education Authority, an *ad hoc* body in Scotland ; that of the insured person to some extent the responsibility of the Insurance Committee. For the hygienic welfare of those employed in

factories the Home Office is responsible. Vaccination, by a strange anomaly, is still in the domain of the Parish Councils, who are also becoming providers of hospital accommodation for many persons well above the poverty line.

Then there are the managers of the voluntary, general and special hospitals, and of the many local infirmaries and cottage hospitals. Add to these a Tuberculosis Committee which unites in one administration all the districts and burghs within a county, and a Venereal Diseases Joint Committee which comprises the districts and towns of more than one county, and we have a complexity and confusion which requires no argument to prove its absurdity.

Since 1919, when the Scottish Board of Health was formed and had transferred to it the functions of the superseded Local Government Board, of the Scottish Insurance Commission, of the Highlands and Islands Medical Service Board, and other bodies, there has been no central anomaly of distributed functions like that which prevails locally.

The Officers of the Health Authorities

Nine of the midland Scottish counties include within their borders areas that are essentially rural in some parts, essentially industrial in others. Let us take one such county as a type of all. It has a population of 80,000, excluding that of its burghs, and is divided into three public health districts. Within its boundaries, but independent in their administration, are two large and several small burghs. In that county the general public

health service and the tuberculosis, child welfare and school medical work are all linked up so as to work in harmony and for the communal advantage.

The officials responsible under the Local Authorities for the public health in this county consist of the Medical Officer of Health (alike for the county as a whole and for its districts); three assistant Medical Officers of Health, each in his own area; five Sanitary Inspectors, each in his own area; four health visitors, each in her own area, and a Veterinary Inspector. In addition, there are the county and district clerks, two medical officers attending the venereal disease clinics, and an analyst, all of whom are part-time officials.

General Environmental Conditions

Except as regards housing and housing appurtenances, the sanitary conditions of the people have been vastly improved during the last forty years. Few of the great industrial centres are without a plentiful water-supply whose purity is above suspicion. Many—indeed, in the populous belt, most—of the rivers are still somewhat grossly polluted; but the graver pollution is for the most part from trade effluents.

The present writer has dealt with the question of housing in *The Housing of the Nation*. The shortage is so intense and so general that it cannot but be proving an influence inimical to health.

The Acute Infections

Scarlet fever of recent years has been usually of a very mild type in Scotland. Diphtheria, although

vastly less fatal than it was before the general use of anti-toxin commenced some thirty years ago, is still a grievous scourge. Both, however, are being vigorously dealt with according to the new methods of immunisation, a work in which the cities have taken a leading part. Whooping cough remains a formidable malady. It caused 1,737 deaths in 1925, over 45 per cent. of these being of children less than one year old, and over 51 per cent. between the ages of one and four years.

In the twelve years 1911 to 1922 inclusive, measles caused 17,198 deaths, of which 16,000 (over 93 per cent.) were of children between the ages of six months and five years. An endeavour is being made, especially in the cities, to control the dissemination of measles infection so that if possible children may take it, if take it they must, at an age when their chance of recovery and of escape from grave sequelæ is greater than in early childhood ; but it must be admitted that the task is not a simple one.

Enteric fever is now rapidly becoming an unfamiliar disease in Scotland. Typhus fever, though rare, is not extinct, but still occasionally breaks out, especially in Glasgow, Paisley and Greenock.

Encephalitis lethargica was first discovered in Glasgow in the spring of 1917. It has continued endemic, attaining its maximum prevalence in 1924. It never affected more than one in 6,000 of the population. Nevertheless, so high is its death-rate, so frequent and so gravely incapacitating the occurrence of late symptoms, that it must be regarded as a grave malady from the social point of view.

Tuberculosis

Tuberculosis was formerly one of the great scourges of Scotland, attaining its maximum in the year 1870, when there were over 13,000 deaths, in the ratio of 404 per 100,000 persons. That death-rate has steadily fallen, until in 1925 there were less than 5,400 deaths, in the ratio of only 110 per 100,000 persons. In certain islands of the Outer Hebrides, of Orkney and of Shetland, and in one or two districts on the mainland, the tuberculosis death-rate is approximately double that for the whole country. Of the deaths from tuberculosis in 1925, 69 per cent, were ascribed to pulmonary or laryngeal manifestations, and were presumably due, at least in the main, to bacilli of human origin. Tuberculosis of non-pulmonary type is believed to be of bovine origin in a larger proportion of cases in Scotland than in England.

Malignant Disease

In Scotland in 1925 the deaths from cancer numbered 6,675, or a death-rate of 136 per 100,000 persons, both the number and the rate being the highest ever recorded.

Rickets

The relative number of severe cases of rickets, resulting in gross deformity, is far smaller than formerly. Almost unknown outside the cities and large towns, its distribution in populous places seems to be markedly unequal. About 4 to 5 per cent. of city children under the age of five show manifestations of rickets to a gravely deforming or

disabling degree. The disease is not confined to the poorest classes ; and, though rickets may be a concomitant of under-feeding or of malnutrition, yet many rickety children are not ill-nourished, and ill-nourished children are by no means all rickety.

Industrial Diseases

As a result of the care and attention given to preventive methods, cases of industrial plumbism and other forms of occupational poisoning are now rare in Scotland. The ventilation of the mines is now uniformly good and in most cases excellent ; and, as a result of inspection and a steady raising of the standards, the dusty atmosphere in which such trades as flax-dressing were wont to be carried on is now practically a thing of the past.

Venereal Diseases

The first steps towards the control of venereal disease by the State and the Local Authorities were taken in 1916. These measures have been on a broad, generous and enlightened scale. By the end of 1925, 45 venereal disease treatment centres had been established in the towns of Scotland. In that year, over 25,000 patients attended these centres, making a total of over 333,000 attendances. More than one-half of the total number attending were new cases. This vast work, including the expense of maintaining in-patients affected with these diseases in the wards of hospitals approved as suitable for the purpose, cost slightly less than £77,000, of which three-fourths is repaid to the Local Authorities by the Treasury through the Scottish Board of Health.

The average incidence of syphilis appears to have been substantially reduced ; and cases of gonorrhœa seem more prone and more prompt to present themselves for treatment at the hands of qualified persons than in former days. In the cities, approximately 10 per cent. of the population are affected with syphilis. Many patients present themselves for treatment only after the early phase, at which treatment is easy and is likely to be promptly and surely effective, is long past. Many desist from treatment as soon as their more urgent symptoms are relieved, and so have to return later, upon the recrudescence of the malady, when all the work has to be done over again. Many Local Authorities in Scotland, therefore, including the five largest, are now convinced that powers are required to compel such cases to continue under treatment at least so long as they are liable to spread infection.

Alcoholism

There is a 'decrease in the amount of excessive drinking.'¹ Despite this, the evil is still of grave magnitude. Every experienced medical practitioner in Scotland is aware that the excessive use of alcohol is a factor in causing or accelerating the death of many of his patients.

Insanity

In the asylums of Scotland, including institutions for mentally defective children, there are over 15,000 inmates. In almost every poorhouse there are one or two insane persons, in the larger poorhouse hospitals many, and in the largest of all no

¹ Scottish Board of Health Annual Report, 1923.

fewer than 224. The number of insane or feeble-minded belonging to Glasgow alone is over 3,500. It may confidently be expected that as the measures to control syphilis become more general, the number of persons suffering from general paralysis will steadily grow less. The other hopeful vista is in regard to mentally defective children and youths. The public conscience has been awakened to its duty in this respect, and for these mental cripples a much better prospect seems in store.

Certain other Diseases

Few practitioners can brace themselves to write 'syphilis' or 'alcoholism' on a death certificate; so that statistics give no indication of the magnitude of these as causes of death. But we now know that locomotor ataxia, general paralysis of the insane, and aneurism are all syphilitic in origin; and death is frankly attributed to one or other of these in about 400 cases in Scotland annually.

Diabetes is still a considerable cause of death in Scotland. Its incidence had begun to fall before the discovery of insulin, and a rapid decline of the death-rate may now be anticipated.

Hydatid disease has still a firm hold in the Shetland Isles. It occurs nowhere else in Britain except in the case of persons who, having acquired the infection abroad, have returned home.

Maternal Mortality and Morbidity

There is reason to believe that in Scotland the puerperal mortality rate is higher than in England; and there is no reason to doubt that it is higher than it need be or ought to be.

Of the deaths associated with pregnancy and child-birth about one-third are due to septic infection. Undoubtedly the great majority of such infections are preventable; but in Scotland they still cause 200 deaths per annum. Various forms of hæmorrhage and eclampsia figure next in amount as causes of puerperal death. Eclampsia has tended to increase of recent years; but, now that the advisability of ante-natal care is becoming more generally known, it is to be expected that its incidence will commence to fall.

In 1923 the Secretary for Scotland appointed a Departmental Committee to inquire into the incidence of puerperal morbidity and mortality in Scotland, and to suggest remedial measures. Among other suggestions it recommended that every death occurring within four weeks after the termination of pregnancy should be fully investigated, and the facts communicated to the Scottish Board of Health; that the ante-natal departments of maternity hospitals should be fully organised; and that training in the work of these departments should be made an essential part of the practical work of both medical students and pupil midwives. It has not as yet been found possible to give effect to the first recommendation. Facilities for ante-natal examination are steadily being extended, and public opinion is gradually coming to appreciate their necessity and their advantage.

Midwives

In some parts of Scotland, such as the capital, practically no labour is attended by a midwife. In other areas exactly the opposite prevails, almost

all confinements being supervised by registered midwives. The midwives in Scotland, as in England, are of two sorts—those who have undergone careful training and received a certificate from the Central Midwives Board, and those who are entitled to practise because they were so engaged before the Midwives Act came into force. The number of the latter is gradually falling year by year.

Infancy and Early Childhood

Health during school years became the concern of the State in 1909, the general health of the working population its care in 1911. Only later, lit by a spark from Huddersfield, was it realised that far too many infants died within a year of birth, and that by a communal effort, officially aided and guided, the evil of a high infant death-rate might be substantially reduced. The endeavour met with a success beyond the expectation of the most sanguine. Only in the first month of life did the death-rate resist the efforts to lower it ; but, with the extension of the knowledge of the value of ante-natal investigation, that also bids fair to be substantially lowered.

School Children

The arrangements for the observation of the physical well-being of children attending the Scottish schools, commenced on a broad scale in 1909, have now attained a satisfactory standard, though efficiency and practical results vary considerably from area to area. The aim is to inspect all pupils

who pass through a full course of elementary education four times in the course of that curriculum, and, in respect of those found defective, to provide supervision and re-examination according to the nature of their defect or malady. In the year 1923, of those inspected, over 48 per cent. were found to be suffering from well-marked illness or abnormality; and, in addition, 65.5 per cent. from notably defective teeth. Treatment for various defective conditions is provided by many authorities.

Medical Service in the Highlands and Islands

In the year 1912, on its having been made clear to the Government of the day that the conditions of the medical and ancillary services in the highlands and islands were woefully inadequate and urgently required amelioration, a Departmental Committee was appointed, of which Sir John Dewar (now Lord Forteviot) was Chairman. That committee made a report whose essential recommendation was that the Treasury should make an annual payment towards the improvement of the medical and nursing arrangements in those difficult areas. The sum voted was £42,000 per annum. It can be claimed that the money has been expended with most admirable discretion and consideration. "Not only has provision been made for a doctor's attendance, when required, in the most inaccessible mainland districts and the remotest islands, but the fees payable by patients have been reduced to so low a figure that no person who requires medical advice or treatment, no matter how far removed from a doctor, need hesitate on financial grounds to call the doctor in. Another equally important effect

of the fund is that it is attracting into the highlands and islands medical service practitioners of a very satisfactory class, most of them young men equipped with up-to-date medical technique and methods."¹ In addition, surgeons resident at Lerwick and Stornoway have been appointed to supply their very essential skilled services to the people of the Shetlands and the Outer Hebrides respectively.

The Public Nursing Service

All over Scotland, commencing naturally in the more populous areas, a nursing service, primarily intended for the poorer people but not severely restricted to them, has been provided. To commence with, and for many years, this provision was entirely unofficial, being partly defrayed by philanthropic contributions and partly by the members of the community benefited. By gradual evolution the duties of the nurses have been extended to include other duties associated directly with the functions of the local health visitor. About the year 1909, health visitors were first appointed by the Local Authorities—nurses who went from house to house advising as to general hygienic requirements, the feeding of children, and such matters as the selection and preparation of food. The ideal—and in some areas it has been practically attained—is for a health visitor with sufficient training in each aspect of her work not only to be, within her area, an apostle of general sanitation, but also to act as nurse in connection with the tuberculosis, child welfare, and school medical inspection schemes of the area.

¹ Fifth Annual Report of the Scottish Board of Health, 1923.

The General Hospitals

The high excellence of the treatment—not merely the strictly medical, but also the environmental treatment in its broadest sense—provided in the six great hospitals of the Scottish cities has made them famous for centuries; while the so-called ‘infirmaries’¹ of the larger towns are now attaining to standards but little, if at all, below those of the city hospitals.

But they have, one and all—or almost all—a grave defect, that of inadequacy. All have a long waiting-list. A Departmental Committee in 1925 reported that Scotland required an additional provision of 3,000 general hospital beds.

*The Special Hospitals : Maternity ; Children's ;
Eye ; Nose, Ear and Throat*

The hospitals for diseases of special organs are ever in increasing demand. There are special hospitals for sick children in three of the cities; but already a number of the larger burghs are feeling that they must make provision for this requirement either by building special hospitals or by adding wards for ailing children to existing institutions.

Twelve years ago there were only three maternity hospitals in Scotland. The city maternity hospitals are now all three taxed to the utmost, and in urgent need of extension. Maternity homes—for normal cases—or maternity hospitals, catering chiefly for the abnormal cases or when a difficult labour is

¹ In England the word ‘infirmery’ betokens a Poor Law hospital. In Scotland it is not so. The word as here used means a general voluntary hospital, and implies no association with a workhouse or, as it is called in Scotland, a poorhouse.

anticipated, have been opened in ten of the burghs. Several others are planned. It is certain that on these lines one of the great advances of hospital activity is to proceed; and those who are most familiar with the problem of midwifery in the humbler houses are those who best realise how beneficent this advance will be.

The Hospitals of the Local Health Authorities

When, some forty years ago, the local health authorities first began to provide hospitals, admission was practically restricted to cases of enteric fever, scarlet fever and diphtheria. Nowadays, with a broader outlook, it is very different. These hospitals are used quite as much for the benefit of patients as for the protection of society; and diseases of very diverse types are admitted—tuberculosis of lung and other organs, gonorrhœa and syphilis, erysipelas, measles and whooping cough, ophthalmia neonatorum and puerperal fever, and the infectious maladies of the nervous system.

Alike in point of design, equipment and administration, these hospitals—or the majority of them—compare favourably with the larger general hospitals. Their only fault is that there are too many of them for economical administration. There are as many as seven or eight within the limits of one moderate-sized county. This is wasteful, and makes combined efficiency harder of attainment. It is, however, being gradually rectified as opportunity for centralisation and co-ordination arises.

Hospitals Administered by the Parish Councils

The Parish Councils of the cities have established eight hospitals, either in addition to, or apart from, their poorhouses proper. These are now in many respects—and some of them in all respects—comparable in structure, equipment, administration and clinical care with the best of the general hospitals. Many persons who are not even indigent are ready to enter the larger parish hospitals, having become aware of the consideration and the skill that they will meet with there.

The hospital at Stobhill, owned by the Parish Council of Glasgow, with 1,500 beds almost always in full demand, is the largest hospital in Scotland. In addition to catering for the sick among the very poorest class, this hospital now serves a number of most useful functions. It has a large maternity department, extensive accommodation for feeble-minded children, and for the last year it has admitted from all parts of Scotland patients in the late stages of encephalitis. The resident medical and nursing staff are on a scale similar to that of a modern hospital; and medical, surgical and other specialists are in charge of the wards, just as in one of the larger general hospitals attached to a teaching school.

General Review and Outlook

Hard but inexorable limitations of space have made it impossible to do more than skim the surface of the topic of health in Scotland. Several important aspects of the subject have perforce been left untouched. Thus the vital question of the supervision of the food-supply of the people has remained

undealt with; consideration of the question of milk-supply has not been possible. Nor has it been feasible even to touch upon the matter of smoke prevention. These matters are mentioned merely to indicate that this survey of health questions in Scotland is intended to be suggestive only, and makes not the slightest pretension to completeness.

According to the light and knowledge of the time, the sanitary laws of Scotland are reasonably well adapted to secure fair conditions of health and welfare for all the people. Time and perseverance on the lines that experience has proved to be sound will result in the elimination of disease as far as the growth of knowledge and the available resources permit.

CHAPTER XVIII

OVERSEAS

As at home, so in its enterprises and responsibilities overseas, the nation has found increasing value in its health services. Devised at the outset for the efficiency and comfort of its soldiers and sailors, these services have been extended first to the treatment of official employees, then to that of their dependants and pensioners, then to the European and native communities around them. They have been a strong missionary force for peace, strengthening the hands of Indian and Colonial Governments, and many medical men have become good and distinguished political officers overseas. The medical services are fertile in development; the Government have found it to their advantage to encourage these services in research and medical education in every country in which they serve; and by degrees there has evolved the greater idea of the prevention and extermination of disease and the building up of positive bodily and mental health. The development of subordinate native medical, of sanitary, and, not least, of nursing and midwifery services, has vastly extended the possibilities of usefulness, sprung from the medical services—possibilities greatly enhanced by well-considered publicity and general education, inducing the individual members of every community to co-operate

in the maintenance both of their own health and of the public health for their common good. These are productive services of great potential value, and the main considerations for their maintenance must be their ultimate efficiency and economy in result.

The Army Medical Service admirably illustrates this view of the medical arm. Lord Wolseley in 1886 wrote : ' The Sanitary officer . . . as a general rule is a very useless functionary. In future, so long as this fad continues, my recommendation is to leave him at the base.' As a result, in the South African War, on an average Army strength of 208,000, there were, in $2\frac{1}{2}$ years, 58,000 cases of enteric fever, with 8,000 deaths, compared with 7,000 killed in action. Thereafter the medical service was radically and properly reformed, and in the Great War, on the western front, on an average Army strength of 1,250,000, there were, in $4\frac{1}{4}$ years, under 7,500 cases of enteric fever, with only 266 deaths. So, as to dysentery, the annual admission-rate in the two wars was respectively 86 and 6 per 1,000. In the Great War, such was the accuracy of sanitary administration that for seasoned troops a daily admission-rate of over 3 per thousand of strength was found an almost certain indicator of insanitary conditions, usually preventable. Units fresh from home would show up to 10 per thousand.

The four functions of this service are, firstly and above all, preservation of health ; then, care and treatment, medical and surgical equipment, and evacuation of sick and wounded from the field. In the Army, the commander of every unit is

responsible for the sanitary condition of the quarters and localities occupied by his command, and for the preservation of the health of those under him. The medical officers, from a Director of Medical Services to a regimental medical officer, are merely the responsible advisers, and, within defined limits, the executive officers of the corresponding commanding officers, from a commander-in-chief to a battalion commander. It is the commanding officer who is, or should be, held to account for undue preventable sickness.

In giving full military rank and title to its medical and other technical officers, as to its combatant officers, the army has recognised the equal status and value of all branches of the service, for it is as a complete machine that it stands or falls. The Navy, perhaps rightly, still maintains the titular distinction of the branch, whose main function is to command. The Air Force, with a medical service constituted in 1920, has in this, as in most respects, adopted principles found best in the Army. The matter is of direct importance to the health of those concerned in the value attaching to the will and orders of the medical officers. The seal was put on the policy of giving full play to the essential value of health to the Army by placing the Director-General of Medical Services on the War Office Council. In 1904, on the recommendation of Lord Esher's Committee, he was omitted from the new Army Council and placed under the adjutant-general; but, in the Great War, Lord Esher confessed that he had been wrong, and that much mischief had been done by the absence of the Director-General of Medical Services from the Army Council.

The following figures for 1926-7 are a guide to the cost and value of these medical services :

	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>
Strength of Force	103,125	220,943	35,500
Cost of Medical Service	£452,900	£986,000	£209,000
Percentage of Total Cost	1.2	4.7	7.9
<i>Medical Personnel :</i>			
Flag and General Officers	4	8	1
Other Medical Officers	288	870	210
Dental Officers	47	156	26
Other Ranks	561	4,021	836
Nursing Staff	74	275 ¹	134
Pay of Medical Officers	£414-£1,810	£511-£2,015	£560-£1,463
Pay of Director-General	£2,363	£2,363	£1,890
<i>Health-rates of force :</i>			
Death-rate	1.4	2.8	4.5
Sickness-rate	22	27	25
Invaliding-rate	24	7	19
Discharge	16	13	10

There have been frequent proposals for amalgamation or closer co-operation between these medical services,² but it is clear that no large measure of co-operation is possible until the three services are combined in a common Defence Force, under a single administration.

The importance of the health services in all three fighting forces is not limited to the men serving ; for these men go on leave, and may carry or spread infection ; still more, it is but for a few years that they serve with the Forces ; they then return to civil life with the habits and ideas impressed on

¹ Plus 98 for wives and children.

² See reports of Geddes Committee (Interim), 1922 ; Mond-Weir Committee (dated 1923), 1926 ; Select Committee on Estimates (Co-ordination of Common Services), 1926.

them at the most receptive period of their lives. Some 50,000 young men are thus discharged every year, carrying unconsciously amongst the civil population the gospel of a healthy life. It is an invaluable leaven with which to raise the health of a nation. The fighting services, as essential to the peace of the world, should, and already to a large extent do, set up a standard of healthy living which all admire and many will follow.

The Ministry of (War-) Pensions, for ex-officers and men other than those of the Regular Services, was established as a separate department by the Ministry of Pensions Act, 1916. As a result of a Departmental Committee, procedure was regularised by the War Pensions Act, 1921. Applications have to be made by 1928. In the year 1925-6 there were 22 hospitals and 79 clinics under the direct control of the Ministry, with 7,753 beds in England and Wales, 743 in Scotland, 763 in Ireland. The number of medical officers in regular employment under the Ministry was 252 full-time and 86 part-time, frequent use being also made of some 1,700 private practitioners. The medical services of the department cost over £3,000,000 out of the total vote of £63,500,000 last year. The medical work concerned is beyond praise ; it has been novel, difficult and open to great misunderstanding. It has been remunerative in the finest sense of the word, and has been, and will be, a considerable factor in the health of the nation. With stabilisation, and before the need for its services is materially diminished, this ministry and its equipment should be absorbed by the Ministry of Health.

India

Crossing the high seas, it is to India that we first look in our wider view of the profound importance of health to good government. Here the British and Indian Governments have responsibility for the defence of 1,805,000 square miles—larger than Europe without Russia—and the welfare of 320,000,000—three-fourths of the Empire. The Indian Medical Service has been essentially an imperial service, with a two-fold function—civil and military. This priceless imperial asset has been crumbling away. Chapter III. of the Lee Commission deals with this service, and reports¹:

‘Established, in the first instance, as a military service for duty with the Indian Army, the Indian Medical Service has played a notable part in the civil life of India. It has not only devoted itself to the medical care of the civil population of both races; it has also been the chief agent in spreading throughout India, by means of collegiate and hospital teaching and by personal example, Western ideas of medicine, surgery and sanitation, while amongst those who have devoted themselves to original research are some whose names are held in honour throughout the world.’

Amongst these may be named Sir Ronald Ross, the discoverer of the origin and prevention of

¹ Report of the Royal Commission on the Superior Civil Services in India, 1924, p. 10. Cmd. 2128, 5s. See also reports of Lord Islington's Commission on the Public Services of India, 1915; and of Sir Verney Lovett's East India (Medical Services) Committee, 1919—a comprehensive review of the whole problem.

malaria ; Sir Leonard Rogers, a leading exponent of the treatment of cholera and leprosy ; and Lieut.-Col. Liston, who traced the spread of plague to the rat-flea ; while it was as a R.A.M.C. officer in India that the late Sir William Leishman, afterwards Director-General of the Army Medical Service, found the cause of *kala-azar*.

In the re-organisation of Indian Government, it is essential to the interests of India that these services should be maintained. Their efficiency has been largely due to their imperial status ; and yet to commit them at present to the sole control of a popularly elected Indian authority would certainly lead, both directly and indirectly, to their decay, for the reason that Western science and its requirements are little understood by the Indian masses, and the service would no longer, as in the past, attract the best men from the medical schools. The problem is further complicated by the military function of the Indian Medical Service in staffing the Indian Army, both in peace and war ; by the need for co-operation with the British Army, staffed medically by the R.A.M.C. ; and by the demand of Europeans and their families for treatment by European doctors—three requirements which seem opposed to the Indianisation of the service, now demanded by political circumstances.

In November 1919, Lord Esher's Committee was appointed to inquire into the administration and organisation of the Army in India, and reported in 1920 against amalgamation of the I.M.S. and R.A.M.C. In March 1924, Lord Lee's Royal Commission on the superior civil services of India reported and accepted for the needs of the Army

the proposal of Lieut.-Gen. Sir Charles Burtchaell, formerly Director of Medical Services, India,¹ to provide a single medical service for all requirements of the British and Indian Armies in India in peace and war, with a reserve created by seconding officers for civil appointments. For civilian needs a Civil Medical Service was to be constituted for each province, and recruited by the Public Service Commission, to be set up under the 1919 Act, under conditions to be fixed by the provincial Governments in consultation with the Commission. A minimum number of officers of this service were to be British—the number to be fixed and maintained by the Secretary of State—half from the R.A.M.C. (India).

In 1925, Lord Birkenhead announced that the above military proposals would not, but that the civil proposals *would*, with reservations, be accepted. The medical services, therefore, of the British Army in India remain under the R.A.M.C. ; the I.M.S. continues under the Secretary of State for all-India services, including the medical services of the Indian Army, with a reserve lent to the civil administration, the medical needs of administration and of the Political Department under the Government of India, and central responsibilities in connection with research, technical training, infectious disease and medical qualifications. On these matters a full pronouncement is awaited with anxiety. The number of officers—674 permanent in 1925, including 532 British, with 148 Indians, temporary—has only been maintained by selecting men from home, without examination, on short-time

¹ Printed as Appendix II. to their report ; see p. 184.

contracts, with promise of gratuities on retirement after six or twelve years' service. Such a position can obviously not continue.

The annual report of the Public Health Commissioner with the Government of India for 1924 shows the magnitude of the issues at stake. It speaks for itself, and should be studied by those interested.¹ Here health is indeed on trial, with a temperature-range of 90 degrees and an annual rainfall varying from 4 to 133 inches ; with peoples and clean-cut classes showing every conceivable variation of physique and intelligence, occupation, habit and diet ; subject to every disease and injury known in England and to many more besides, that sweep like forest fires through the continent, picking up their hundreds of thousands of victims on the way ; a populace to whom European restraint is naturally repugnant, but for whom the British Government hold themselves responsible—here is a challenge to British administration worthy of the best *personnel* and resources it can provide. Every year in British India some 8,320,000 births and over 6,000,000 deaths are registered. In 1924 the birth-rate was 34, death-rate 28, infant mortality 189, as compared with the English 19, 12 and 75 respectively ; and the variations are startling. But when we read of over 55,000 deaths from smallpox in the year, 230,000 from dysentery and diarrhoea, 294,000 from cholera, 334,000 from diseases of the lung, 362,000 from plague and over 4,000,000 from fevers, one-third malaria—most of them preventable by the proper application of

¹ Office of the High Commissioner for India, 42 Grosvenor Gardens, S.W.1, published 1926, 7s. 3d.

present knowledge—we realise the loss of manpower, welfare and contentment with which the medical services and civil administration have to grapple ; while in money value, for instance, the rat is estimated in the first twenty years of this century to have cost India £828,000,000—£41,000,000 a year, 7 per cent. of her income.

And still more we recognise our responsibility in the matter to the world. For in the nineteenth century six great pandemics of cholera spread from India over Europe, and five reached America. The great factor is the movement of 20,000,000 persons annually in pilgrimages in India ; inoculation of the pilgrims in the village dispensaries would protect the world. So also plague in the Punjab in 1924—the worst outbreak for seventeen years, but not approaching the appalling epidemics of 1904, 1905, and 1907—was largely the cause of a greater world incidence than for the previous five years, increasing, for instance, not only in Java and Madagascar, but in countries so far afield as South-West Africa.

These conditions are being properly tackled. In 1924, 8,248,000 were vaccinated against smallpox, 2,463,000 re-vaccinated ; vaccination against the enteric fevers, plague, cholera, rabies and snake-bite, which caused 20,000 deaths, is making headway ; maternity and infant welfare work, baby weeks, school medical inspection, health visiting, anti-malarial work, improvement in housing, supervision of mines, factories and railways, are all being developed, while the big cities have established a sanitary control of high order. Hookworm, the cause of common anæmia in the coolie, affecting

45,000,000 of wage-earners, is being tackled by employers, who find that a cure increases the labourer's earning capacity by 25 per cent. In British India there are 5,140 medical institutions, treating, in 1924, 881,000 in-patients and 47,500,000 out-patients, with over 1,500,000 surgical operations; there are 22 mental hospitals for 8,000 men and 2,000 women; there are 6 medical colleges and 23 medical schools, turning out hundreds of young Indian doctors of both sexes every year; there are 7 Central Research Institutions, and effective inquiries are constantly being pursued for the prevention of disease. The jails and the British and Indian troops are a monument of careful, well-disciplined sanitation. Taken all in all, India is one of the greatest and most satisfactory examples of efficient and philanthropic work in respect to the health of the people that any country could, up to the present, hope to show.

The Colonies

As in India, so in other fields overseas, health and disease have proved themselves vital factors in our national undertakings. The Scottish expedition of the Darien in 1798, the Walcheren expedition in 1809, came to grief mainly through disease. The appalling conditions of the negro slave-trade brought home the need of sanitation, both in the interests of humanity and economy. De Lesseps lost 22,000 labourers from disease in the 'eighties and failed to cut the Panama Canal, which the Americans achieved by 1920 through scrupulous attention to health. Mr. Joseph Chamberlain was the first

Colonial Secretary to seize the problem of health in the countries under his administration, and focussed attention on the health of Europeans in the tropics. In 1898 he circularised the General Medical Council, the Medical Schools and the Governors of Colonies on the subject ; in the next year the Liverpool and London schools of tropical medicine were opened—the latter with Government aid—and, while expeditions to study disease have been sent out to the tropics—32 from one school, 19 from the other—with useful results, a steadily increasing number of medical men and women and sanitary inspectors, many from overseas, have been trained in England and Scotland, hall-marked with diplomas and degrees in tropical medicine, and distributed over the world to give effect to the new knowledge. In 1898, too, at Mr. Chamberlain's suggestion, the Royal Society formed a Malaria Committee, which in 1903 added the tsetse fly to its name, and in 1904 became the Tropical Diseases Committee. In 1908 the Colonial Office established a Sleeping Sickness Bureau, which in 1912 became the Tropical Diseases Bureau, and publishes a concise and comprehensive monthly bulletin of scientific information from all countries on the subject. An Advisory Committee for African dependencies was set up by the Secretary of State in 1909, and in 1922 became the Colonial Advisory Medical and Sanitary Committee, with extended scope to other Colonies and Protectorates. This increasing recognition by the Colonial Office reflected the interest shown in the subject by the outer world, alike of medicine and commerce ; by the work of the Lister Institute, Natural History

Museum and Royal Society of Tropical Medicine and Hygiene ; by the erection by Mr. Wellcome of his Bureau of Scientific Research and Graphic museum, now in Endsleigh Gardens, fascinating every tropical traveller or resident who visits it, as well as every medical man ; by the institution at Cambridge of the Institute of Parasitology and in London of the Ross Institute ; by the persistent work of the Royal Sanitary Institute in training and examining sanitary inspectors in various parts of the Empire for tropical work.

But the key of sanitary progress, again, is the medical service, and there is no single Colonial Medical Service ; each Colony has its own form of administration and its own officers and terms of service ; only in West Africa, in Malay, and, since 1921, in East Africa, are there unified services. In 1920, Sir Walter Egerton's Departmental Committee to inquire into the Colonial Medical Services reported in favour of a unified medical service as the ideal, to be recruited from recently qualified men, liable for service in any Colony to which appointments are made by the Secretary of State.

In 1925 a new Dominions Office was created, with separate Parliamentary and permanent Under-Secretaries, Mr. Amery remaining Secretary of State for both the Dominions and Colonial offices ; and in the Colonial Office, thus limited in its task, Mr. Amery announced :

‘ We shall establish a Chief Medical Officer and at least the small beginnings of a health department, which will enable us to keep in far closer touch with the health and research work being

done all over the Empire, and will give more direct guidance and assistance to the medical officers who are working, often in great difficulties, all over the Empire.'

In 1926, a Chief Medical Adviser was appointed by the Secretary of State for the Colonies ; while, on the lay side, it was decided that civil service entrants to the Colonial Office must be prepared to spend two years or more in the Colonies—an experience that should materially assist the Office in dealing with its vast responsibilities and opportunities. A large factor in securing these and future advances has been the three tours since 1921 of Major Edward Wood (now Lord Irwin, Viceroy of India) and Major Ormsby-Gore, as successive Under-Secretaries, to the West Indies¹ and East² and West³ Africa. Their reports give a vivid idea of the conditions of native life, both primitive and in various degrees civilised, as well as of European life in their midst ; of the vast economic, humanitarian and political value of wise efforts for the improvement of the public health ; of the fundamental need of focussed and co-ordinated research, and of the present case for general and intensive progress in restraint of preventable disease and in promotion of health throughout our imperial estate.

There are four points to which attention should be specially directed. Good nursing for Europeans, as ultimately for natives, is of cardinal importance to the whole machine of each colony ; it is supplied by the Overseas Nursing Association,⁴ who have

¹ Cmd. 1679.

² Cmd. 2387.

³ Cmd. 2744.

⁴ Imperial Institute, S.W.7, and 10 Rothesay Terrace, Edinburgh.

586 nurses working abroad, and deserve and require the most generous financial support.

Secondly, the proper training in Great Britain of medical students and others in the science and practice of health work on the broadest lines is the corner-stone of a health policy. The outlook of public health in this country has hitherto been parochial, limited to home conditions ; the widening to include tropical conditions at once makes of it a whole science of fascinating interest, attractive to the enterprising character of medical students, giving access to a world-wide field. This prospect is now in sight, thanks to the generous gift of \$2,000,000 from the Rockefeller Trustees and the undertaking of the British Government to maintain it ; the London School of Hygiene and Tropical Medicine, in a building worthy of it now rising behind the British Museum, has arranged to take over, in respect of public health, the special work of the teaching schools in the London hospitals, which are not specially suited to it ; the director was appointed in 1925 and a complete curriculum and staff are being arranged. The school may well become of international as well as of imperial and national importance.

Our third point is the importance of the mutual relations between our own and other nations. By the grave pronouncement of the Imperial Conference of 1926 that the Motherland and Dominions of the British Empire were sister-states of equal status, we must recognise that in public health the sister-nations, advancing in close co-operation with their Motherland, are part of the international comity which has organised itself on a comprehensive

scale and is doing efficient work. After the war, a new International Sanitary Convention was signed at Paris in 1926, based on the Office International d'Hygiène Publique,¹ a body including the Soviet Union and the United States. This body, founded by the Rome Convention of 1907 on the basis of a pre-existing Comité in Paris, where it continues its new career, has now formed a Permanent Committee, acting as the Advisory Council of the Health Organisation of the League of Nations. Forty-three Governments are here represented, and 41 were present at the last three meetings, under the presidency of the Belgian, M. Velghe. The League of Nations has also set up a Standing Health Committee of 20 members, under a Danish President, Dr. Madsen, and a Health Section or Executive, forming part of the League-Secretariat at Geneva, under a Polish Director, Dr. L. Rajchmann. The League Budget for its health organisation is established at 1,000,000 Swiss francs; the Rockefeller Foundation has given grants of half as much again for special purposes. The work, carried on in any part of the world required, ranges over large fields—the international study of diseases, standardisation of sera, statistics and intelligence—with an eastern bureau at Singapore—publicity, education and effective co-operation. Its potential importance can hardly be exaggerated. Note must also be made of the Comité International de la Croix Rouge, founded in Geneva in 1864; of the separate League of Red Cross Societies, founded in 1919; and of the joint committee of the two, which has devoted itself to

¹ 195 Boulevard St. Germain, Paris.

relief work, as with refugees and repatriated prisoners, in famines and in the typhus epidemic in Poland.

For our fourth and last point we would allude to two speeches of the Secretary of State for the Colonies to the Imperial Social Hygiene Congress in 1925 :

‘ The problem of development in Africa is, in the main, a human problem. . . . ’

‘ Not the least of the functions of the Colonial Office is to be an Imperial Ministry of Health.’

All who recognise the great resources and heavy responsibilities of our imperial heritage, however much they may think and work for improved trade and industry, moral and educational progress, transport, administration and financial aid, must first recognise that all depends on the human element and that the primary need of man, of whatever race, colour or age, is health ; that health costs money, but that money wisely spent is strictly, quickly and abundantly remunerative. Moreover, from us all in our inward souls, as from public opinion, expressed at the polls, there is a demand that we should hold out a helping hand to those towards whom we have accepted responsibility. These matters it is difficult to visualise except on the spot ; and we would endorse Major Ormsby-Gore’s appeal to Members of Parliament themselves to visit and personally to interest themselves in the development and welfare of the Dependencies of the Crown.

ON

CONCLUSION

As we recover from the effects of the war, there is constant search for new fields of enterprise and development, for fresh sources of public and private wealth. Here at our very feet is the gold-mine for which we have been asking. At home or overseas, in its homes and in its individual persons, the nation has a latent force, still at the mid-stage of its growth and waiting for further development. Compared with other mercantile and national enterprises the cost is small, the profits great, the indirect profits greater still. It is not by money alone that the value can be estimated ; it is not by money alone that the result can be obtained. The will and understanding of the individual are essential to the success of the venture ; every £1 spent is £1 wasted unless it draws out £2 worth of determined effort from the person concerned.

This is no Socialistic measure, further to squander the limited capital of the nation in mere vote-catching comfort. It is the proposal of common sense to make general use of existing knowledge by methods that have proved their value, and to allow our neglected human capital to fructify to its full capacity. It is in that sense that we commend to a new generation of hopeful and vigorous fellow-countrymen this brief guide to their common assets and liabilities in the Health of the Nation, this gateway to the Joy of Life.

BIBLIOGRAPHY

OFFICIAL publications may be purchased direct from His Majesty's Stationery Office at Kingsway, W.C.2, or 120 George Street, Edinburgh, or through any bookseller.

The bibliography of housing is given in *The Housing of the Nation*, by the present author.

For *current information* in clear, Parliamentary language, the annual reports of the chief officers concerned are strongly recommended, especially those of Sir George Newman as Chief Medical Officer both of the Ministry of Health (*On the State of the Public Health*) and of the Board of Education (*On the Health of the Schoolchild*), and those of the Scottish Board of Health, which include the reports on school health. For England and Wales the financial and less technical facts are given in separate annual reports of the Ministry of Health and Board of Education. For more particular purposes, reference should be made to the census reports—e.g., general tables (1925), general report (1927), and reports on occupations, industries, housing, fertility, and separate counties—and to the annual statistical review of the Registrar-General; to annual reports of the Medical Research Council, Safety in Mines Research Board, Board of Control (Mental), Ministry of Labour, Chief Inspector of Factories, Public Health Commissioner with the Government of India, and to those on the Health of the Navy, of the Army, and of the Air Force. The Home Office issue an annual volume of licensing statistics, and the Stationery Office a useful guide to current official statistics.

On special problems, the reports of Royal Commissions are usually both authentic and exhaustive, and their conclusions are concise. Reference may here more especially be made to those on Sewage Disposal (1903), the Poor Law (1909), Tuberculosis (1912), Venereal Disease (1916), Mines (1925), National Health Insurance (1926), and Lunacy and Mental Disorder (1926). The reports of certain departmental committees are also valuable within their terms of reference, such as those of the Health of Munition Workers Committee (1918), the Astor Committees on Tuberculosis (1912 and 1919), the Newton Committee on Smoke Abatement (1921), the Monro Committee on Preservatives in Food (1924), the Maclean Sub-Committee on

the Transfer of Functions of Poor Law Authorities (1917), the Haldane Committee on the Machinery of Government (1918), the Tryon Committee on the Ministry of Pensions (1921), the Cave Committee on Voluntary Hospitals (1921), the Betterton Committee on Public Assistance Administration (1924). The reports of the National Birth-rate Commission (Chapman & Hall, 1917 and 1920) states the problem of the declining birth-rate. The articles in the *Encyclopædia Britannica*, eleventh (1910) and subsequent editions, are of general value, such as those on Population, England (Local Government), Poor Law, Tuberculosis, Cancer, Temperance, Liquor Laws, Insanity, Vaccination, Veterinary Science, Vivisection. The Ministry of Health, Board of Education, Medical Research Council, and Home Office issue frequent memoranda, of which catalogues may be had from the Stationery Office. The health organisation of the League of Nations is publishing a series of important international studies of health problems (Constable & Co., 12 Orange Street, W.C.2); and the International Labour Office of the League of Nations at Geneva publishes useful international reports, such as that on *Factory Inspection in Certain Countries* (1923, 5s.), to be obtained through the League of Nations Union, 15 Grosvenor Crescent, S.W.1.

For the legal aspects, reference may be possible to the official annual publications of the Statutes passed and of the Statutory Rules and Orders issued during the year; to the index to those in force on June 30, 1924; to the Statutes, etc., relating to National Health Insurance, with Consolidated Regulations, 1924, and to the Approved Societies Handbook, 1925. *Health Legislation*, by Lieut.-Col. F. Harvey, R.A.M.C. (1926), and the *Handbook of Sanitary Law*, by Burnett Ham, summarise the case conveniently.

Of the professional text-books, amongst the classics are *English Sanitary Institutions*, by Sir J. Simon, and *The History of Epidemics in Britain*, by Charles Creighton; while for general use, readers may be referred to *Hygiene and Public Health*, by Whitelegge and Newman, and to the *Synopsis of Hygiene*, by Jameson and Marchant.

Useful reference books are :

The Statesman's Year Book.

The Municipal Year Book.

A Handbook of Public Social Services—National Council of Social Service, 2s.

A Handbook of Statutory and Voluntary means available for the Prevention and Relief of Distress (P. S. King & Son, Ltd.), 2s. 6d.

Guide to Widows', Orphans', and Old Age Pensions, by T. S. Newman (1925), 6d.

Guide to National Health Insurance, by T. S. Newman (1925), 6d.

The following may be suggested from the many instructive publications constantly being issued on the several aspects of health work :

The Ministry of Health, by A. Newsholme, 5s.

The Declining Birth-rate, by A. Newsholme, 6d.

The Conduct of Medical Practice, by the Editor of the *Lancet*, 10s. 6d.

An Outline of the Practice of Preventive Medicine, by Sir George Newman, 1s.

Recent Advances in Medical Education in England, by Sir George Newman, 1s. 3d.

The Fight Against Infection, by Lieut.-Col. G. E. F. Stammers, 2s. 6d.

Drink in 1914-1922 : A Lesson in Control, by A. Shadwell.

The House of Health, by Sir John Robertson, 2s. 6d.

The Health of the Workers, by Sir Thomas Oliver, 2s. 6d.

The Child at School, by Sir Leslie Mackenzie, 2s. 6d.

The Story of English Public Health, by Sir Malcolm Morris.

Popular Education in Public Health, by Daley and Viney, 6s.

Problems in Tuberculosis, by Sir J. K. Fowler, 20s.

Health Problems of the Empire, by Balfour and Scott, 16s.

Health and Empire, by F. E. Fremantle, 7s. 6d.

Further information on publications of all kinds in connection with their subjects may be obtained from the organisations scheduled on p. 200. Their annual reports are often most useful reviews of legislation and progress during the year ; and most of them issue periodicals, which have a considerable value in spreading information and maintaining interest. Sample copies will, no doubt, be sent on application. The library of the College of Nursing is worthy of a visit.

DIRECTORY OF LEADING ORGANISATIONS

Government Departments

Whitehall, S.W.1; except Pensions, Ministry of, 18 Great Smith Street, S.W.1.

Air Ministry, Kingsway, W.C.2.

Trade, Board of, Great George Street, S.W.1.

Mines Department, Dean Stanley Street, Millbank, S.W.1.

Medical Research Council, 15 York Buildings, Adelphi, W.C.2.

Board of Control, 66 Victoria Street, S.W.1.

General Medical Council, 44 Hallam Street, Portland Place, W.1.

General Nursing Council, 20 Portland Place, W.1.

Central Midwives' Board, 1 Queen Anne's Gate Buildings, S.W.1.

General

Royal Sanitary Institute, 90 Buckingham Palace Road, S.W.1.

Royal Institute of Public Health, 37 Russell Square, W.C.1.

Institute of Hygiene, 33-4 Devonshire Street, W.1.

British Red Cross Society, 19 Berkeley Street, W.1.

National Health Society, 53 Berners Street, W.1.

National League for Physical Education and Improvement, Carnegie House, 117 Piccadilly, W.1.

People's League of Health, 12 Stratford Place, W.1.

Research Defence Society, 11 Chandos Street, W.1.

Population

Eugenics Education Society, 52 Upper Bedford Place, W.C.1.

Housing

See *Housing of the Nation*, by the present author, Appendix II.

Food and Drink

Food Education Society, Dane's Inn House, 265 Strand W.C.2.

National Clean Milk Society, 3 Bedford Square, W.C.1.

True Temperance Association, Donnington House, Norfolk Street, Strand, W.C.2.

United Kingdom Alliance, 1 Victoria Street, S.W.1.

Mother and Child

National Society for the Prevention of Cruelty to Children, 15 Leicester Square, W.C.2.

National League for Health, Maternity and Child Welfare, 117 Piccadilly, W.1.

Hospitals

King Edward VII Hospital Fund, Worcester House, Wallbrook,
E.C.4.

Tuberculosis

National Association for the Prevention of Tuberculosis,
19 Tavistock Square, W.C.1.

Welsh National Memorial Association, Westgate Street,
Cardiff.

Cancer

British Empire Cancer Campaign, 19 Berkeley Street, W.1.

Imperial Cancer Research Fund, Queen's Square, Bloomsbury,
W.C.1.

Venereal Disease

British Social Hygiene Council, Carteret House, Carteret
Street, S.W.1.

Mental

Central Association for Mental Welfare, 24 Buckingham
Palace Road, S.W.1.

Industrial

Industrial Welfare Society, 51 Palace Street, S.W.1.

Professions

British Medical Association, British Medical Association House,
Tavistock Square, W.C.1.

Society of Medical Officers of Health, 1 Upper Montague
Street, Russell Square, W.C.1.

Royal Sanitary Institute, 90 Buckingham Palace Road, S.W.1.

Women Sanitary Inspectors' and Health Visitors' Association,
92 Victoria Street, S.W.1.

Royal British Nurses' Association, 194 Queen's Gate, S.W.7.

College of Nursing, Henrietta Street, Cavendish Square, W.1.

Queen Victoria Jubilee Institute for Nurses, 58 Victoria
Street, S.W.1.

Overseas Nursing Association, Imperial Institute, S.W.7.

Midwives' Institute, 12 Buckingham Street, W.C.2.

Pharmaceutical Society, 17 Bloomsbury Square, W.C.1.

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ACTS AND BILLS RELATING TO
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